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THE
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FEBRUARY, 1928

SUPPLY CURVES AND MAXIMUM
SATISFACTION

SUMMARY

I. The decreasing cost schedule as a schedule of uniform or average cost, 170. — Incompatible with rent, 170. — Marshall's particular expenses curve and its uses, 171. — II. Professor Knight's prediction that an increased demand increases normal price, 175. — It ignores possible economies, 177. — It overlooks reduced demand elsewhere, 178. — III. The possibility of increasing cost, 180. — Professor Sraffa's view, 181. — Professor Pigou's view, 183. — Professor H. E. Miller on consumers' surplus, 185. — IV. The maximum satisfaction doctrine, 189. — Professor Pigou's statement, 189. — Marshall's treatment, 190. — Method and assumptions in dealing with the tax and the bounty as one problem, 191. — Four cases, 193. — The general conclusion, 196.

THE purpose of this paper on the familiar problems of supply curves and maximum satisfaction is not to bring forward new evidence, tho evidence is greatly needed. It seeks a more precise theoretical statement of the conditions under which aggregate satisfaction may be increased by a system of taxes and subsidies. It will not attempt to cover all the points raised in the previous discussions of the question, and will not undertake any general survey of the views of economists who have written about the problem.

Four problems will be examined, all dealing with long-run equilibrium conditions. The first is the construction and interpretation of the long-run supply schedule of a

commodity produced under conditions of decreasing cost. The second is Professor Knight's contention that all commodities show increasing, uniform cost. The third is the possibility of increasing cost and the nature of consumers' surplus. The last problem, for which the previous discussion will have prepared the way, is the effect on consumers' surplus of state intervention by taxes and bounties.

I

The first part of this paper consists of a criticism of the idea that the long-run supply schedule of a commodity produced under conditions of decreasing cost is a schedule of *uniform* or *average* cost. To question this assertion may appear presumptuous, for it not only is found in textbooks¹ but has the authority of Professor Taussig² and Professor Pigou.³ This interpretation, whether stated in terms of average or of uniform cost, would have it that under conditions of normal equilibrium a commodity showing decreasing cost sells at its uniform or average cost and that the amount received for the entire stock is just enough to cover the aggregate expense of producing it. As Professor Taussig says, "There is no such phenomenon as surplus gain to any producer."⁴

This interpretation of decreasing cost is open, I submit, to a simple but conclusive criticism. It is incompatible with the fact of rent. If a commodity yields

1. E. g., F. R. Fairchild, E. S. Furniss, and N. S. Buck, *Elementary Economics*, i (1926), 337.

2. *Principles of Economics*, 3d rev. ed. (1921), i, 187, 188. Professor Taussig speaks of uniform cost.

3. "The Laws of Diminishing and Increasing Cost," *The Economic Journal*, xxxvii, 187 (June, 1927). Here the supply curve is the average cost curve. Compare *The Economics of Welfare*, 2d ed. (1924), p. 193. But see below, p. 184, n. 2.

4. *Principles*, i, 187.

rent, there must be a surplus of aggregate receipts over aggregate expenses. Only if there is no rent may a commodity sell at uniform or average cost and yield no such surplus. Practically speaking, we cannot find a commodity in which no part of the total receipts goes to rent, certainly not in the large-scale industries which are supposed to show decreasing cost. The fact that rent is a share in the aggregate receipts of every commodity makes it impossible to say that there are real cases of decreasing cost where the equilibrium price covers average cost and yields no surplus gain. We are thus placed in a dilemma. If there are real cases of decreasing cost they cannot be cases where the normal price is the uniform or average cost of production, and we must reject the average or uniform cost interpretation of the supply curve. On the other hand, if we prefer to retain this interpretation we must consider cases of decreasing cost as hypothetical cases which cannot exist. For my part I take the first alternative. I believe that cases of decreasing cost are real cases and that goods produced under such conditions do not normally sell for their average or uniform cost.

To clarify this situation — to explain the cost at which such commodities sell and to explain the rent they yield — we must use Marshall's concept of the particular expenses curve. This valuable aid in understanding the supply curve is unfortunately hidden in a note in one of Marshall's appendices.⁵ It is so important that we may say that Marshall did not improve his exposition when he took it out of the main text, in which it appeared earlier.⁶

5. Principles, App. H, sect. 4, n. 2.

6. Fourth ed. (1898), p. 621, n. Marshall's exposition, with the awkward distinction between aggregate and actual expenses, does not seem entirely fortunate. He wrote (App. H, sect. 4): "The aggregate expenses of production might . . . be found either by multiplying these marginal expenses by the number of units of the commodity, or by adding to-

The particular expense of any unit is the amount required for its production when the total volume of production is given. The particular expenses curve does not indicate the cost of the units for any other volume of production. The general economies of production are taken as fixed and uniform throughout. All producers have access to the economies which belong to this volume of production, but they retain differential advantages over one another. The long-run normal supply curve, on the other hand, indicates the whole range of supply prices and quantities produced. It does not take the economies of production, which vary with the total volume of production, as fixed and uniform throughout. Neither does it indicate the total expenses of any volume of production, or the varied expenses of its particular parts caused by differential advantages.

This concept of the particular expenses curve enables us to see how commodities produced under conditions of decreasing cost yield rent. The particular expenses curve separates the economic rent from the expenses of producing the commodity. It shows the particular expenses of each unit and the aggregate expenses of producing all the units of the normal output of the commodity. The price received for the entire normal output is greater than the aggregate expenses of producing it. In the state of normal equilibrium which we are considering here, this excess constitutes the economic rent.

These relations of the particular expenses curve are together all the actual expenses of production of its several parts, and adding in all the rents earned by differential advantages for production. The aggregate expenses of production being determined by either of these routes, the average expenses could be deduced by dividing out by the amount of the commodity." Average expenses which are not the average actual expenses appear to me misleading. This whole matter might serve to illustrate Marshall's remark elsewhere (*Principles*, V, x, sect. 5, n. 1), that it "is . . . inexpedient to say that the rent of land does not enter into . . . price."

illustrated in Figure 1. The conditions of decreasing cost are represented in the downward inclination of the supply curve, SS' . When the demand is dd' , the normal output is Oh , and the equilibrium price is ah . So far we know nothing about the rent that the commodity yields. But now let pe be the particular expenses curve. The aggregate expenses are now seen to be $Ohap$, and the rent to be pab . If the demand changes from dd' to DD' , an entirely new particular expenses curve, PE , is

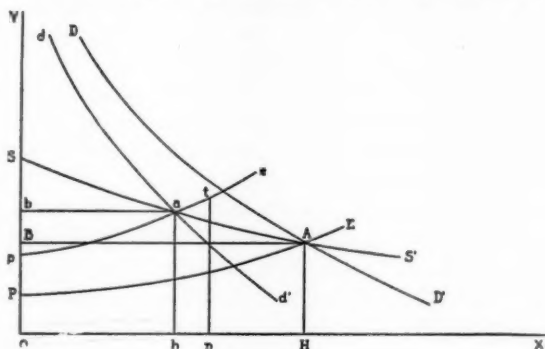


FIGURE 1

necessary to indicate the new rent, PAB . The new particular expenses curve is lower than the former curve for the same reason that the supply curve has a downward inclination: the general economies are very much greater when the normal output increases in response to the increased demand.

The particular expenses curve also makes it clear that in the case of an article produced under decreasing cost, as in the cases of constant cost and increasing cost, the expenses of the several parts are not uniform.⁷ The

7. The reader will see that the conclusion is essentially the same as that reached by Professor Bullock in his contribution in the *Quarterly Journal of Economics*, vol. xvi (August, 1902) on "The Variation of Pro-

supply price at the equilibrium point is the cost of the most expensive unit of the equilibrium output. The normal price is thus the marginal cost, in the best sense in which the term is used. It is not the marginal cost if the term is used, as it has been used by some writers, to indicate the amount by which the total cost is increased when the normal output is increased by one unit.

The particular expenses curve thus sets off the share of the total receipts that goes to rent and indicates that the equilibrium price is the marginal cost. It also serves another purpose — it may be used to show that decreasing cost appears only in response to an increase in normal demand. If, in the absence of an increased demand and through miscalculation by the producers, an abnormally large amount is produced, the abnormal portions of the output are more expensive. The economies of the industry as a whole, as distinct from the economies of large-scale production and large-scale management, will be little affected. The venturesome producers of the abnormal amount will have to meet alone the difficulties of diminishing returns, spurring labor to greater efforts, and attracting men and resources away from other industries. Marshall drew his particular expenses curve upward beyond the equilibrium point, tho he did not state definitely the significance of this

ductive Forces." He said (p. 494): "In competitive industry, under static conditions, the rule is that producers possess unequal facilities and unlike abilities, so that we may affirm the existence of varied costs." I should prefer to state the rule of varied costs as dependent on the law of diminishing returns, — as indicated in the phenomenon of rent, — a rule true even if we abstract differences of natural resources and of abilities. But it is at least questionable if much is gained by pushing abstraction so far. There are, of course, difficulties in allowing for differences of abilities in a cost curve, but these are difficulties in relating costs and expenses which do not concern us here, and the difficulties are no greater for different grades of business ability than for different grades of labor. Throughout this paper we neglect the distinction between cost and expenses.

part of the curve. It may be taken to measure the abnormally high cost of the abnormally large output. Referring to the diagram, tn may measure the increased cost of producing the unit n when the normal demand is dd' . If everything else remains equal, increasing the output of the commodity beyond the equilibrium point does not result in diminishing cost. Decreasing cost appears only when the general economies of the industry respond to changes in normal demand.

The foregoing discussion has dealt exclusively with questions of technical terminology. I have endeavored to combat the identification of the long-run supply curve of a commodity produced under conditions of decreasing cost with a curve of uniform or average cost, to emphasize the importance of Marshall's particular expenses curve, and to show in what sense marginal cost may be said to be identical with the normal price. But what does the whole discussion amount to? Is it anything more than words and more words, playing with concepts, and quibbling over phrases? It will be justified, I hope, in the second and fourth parts of this paper. It will clarify issues of substantial theory, not of terminology; it will help decide questions of prediction, questions of the effect of making certain changes in economic conditions.

II

If economic conditions are changed by an increased normal demand for a commodity produced under competitive conditions, Professor Knight would predict an increased normal price. He does not make this statement in his article on "Cost of Production and Price over Long and Short Periods,"⁸ but it may be fairly inferred from his diagrams⁹ and from his argument. He

8. *Journal of Political Economy*, xxix (1921), 304-335.

9. *Ibid.*, p. 309.

begins by treating supply as the independent variable, and cost and selling price as functions of supply, and goes on: "Looking at the supply curve from this new point of view it is evident that decreasing costs would mean that at higher prices less of the commodity would be produced than at lower prices. This certainly seems paradoxical, and suggests that there is something wrong with the notion of costs decreasing as supply increases. The further course of the argument will show that decreasing cost as a long-run tendency is indeed impossible under a natural competitive adjustment of industry. Under the conditions assumed, an increase in the production of any commodity means a transfer of productive resources into the industry and a decrease in the production of some other commodity. But, other things being equal, this decrease in the production of other goods will raise their prices and increase the strength of the competitive attraction which they exert on productive resources against the industry in question in which output is being increased. In simpler terms, an increase in the output of an industry involves increased demand for the productive goods used in it, which increased demand raises their prices, that is, raises the costs of production of the commodity turned out."¹

Professor Knight's argument leads to some extraordinary results. An increased production of a given commodity, he says, brings about a rise in its price and in the prices of other commodities. He concludes, in other words, that it results in an advance in the general price level. He says, also, that there will be a rise in the prices of the productive factors. This must mean an increase in the money income of the producers, an increase in the money income of the community. Now, Professor Knight has said nothing about any assumed changes in

1. Pages 315, 316.

money and credit. He has definitely stated that he is proceeding on the assumption that "the fundamental conditions of economic life in the aggregate, on both the supply and demand sides of the relation, remain unchanged."² Under these circumstances, it must be said, advances in the general price level and in money incomes are surely unexpected consequences of the increased production of a given commodity. The conclusions certainly seem paradoxical, and suggest that there is something wrong with Professor Knight's analysis.

Professor Knight seems to have been over hasty in asserting that the cost of production of the commodity must increase with a rise in the prices of the productive goods. If the increased demand leads to economies through the application of existing technical knowledge, the economies might even result in lower units costs of the commodity. The application would, of course, have to be one dependent on the increased demand. The economies of large-scale production or of large-scale management, which might be applied to drive out competitors even if demand remained the same, cannot be considered. Whether or not there are general economies of the industry, which are dependent on the size of its aggregate output, is a question of fact which cannot be answered by abstract reasoning. It must be answered in the negative before we may be sure that a rise in the prices of the productive goods will bring an increase in costs. Professor Knight admits that in the case of monopoly the economies of large-scale production may result in decreasing cost, which must mean that they offset the increased prices of productive goods he alleges will occur.

Professor Knight has, however, fallen into a more serious error than that of neglecting possible economies

of the industry as a whole. His conclusion that an increased demand for a given commodity will cause a general rise in the prices of productive goods is so striking that it needs further examination. The increased production of a given commodity, accompanied by the reduced production of others, is said to raise the prices of productive goods. It would appear that the increased production of other commodities, accompanied by the reduced production of the given commodity, would likewise raise the prices of productive goods. Accordingly, if the production of a commodity is first increased by a certain amount and later decreased by the same amount, both changes raise the prices of productive goods. The result would be that, when the second change in output had cancelled the first change, the same output of the commodity would cost more than before. This certainly seems paradoxical.

The explanation of Professor Knight's difficulty lies, I think, in a mistake in handling the one-thing-at-a-time method. He has not kept distinct the cost of increasing the normal output and increasing the output beyond the normal. In more technical language, he has not distinguished between the long-run normal supply curve and the particular expenses curve beyond the equilibrium point. In constructing the normal supply curve, we are concerned with increasing the normal output in response to an increase in the normal demand. Professor Knight has overlooked the fact that, when fundamental conditions remain unchanged, an increase in the demand for one commodity implies a decrease in the demand for some other commodity or commodities. That is the crux of the matter.

If this argument is correct, an increased demand for a given commodity which leads to an increase in normal output does not necessarily raise the prices of produc-

tive goods. As the normal demand and the normal output increase on the one side, the decreased demand elsewhere may release the productive goods necessary for the increased output. An increased demand, which is perhaps better termed a shift in demand, need not affect the distribution of wealth or the total money income. If the economies of production are not affected by the changed distribution of resources and if the productive goods are no less adapted to their new use than to their old, the additional output will be produced without change in unit costs. Under these conditions, the shift in demand will involve a changed allocation of productive goods to their several uses, but no change in normal prices. The supply curve will be a straight line. Costs will be constant.

The foregoing argument against Professor Knight's treatment of the effect, on the prices of productive goods, of the increased production of a commodity may be restated as an argument against his use of the opportunity cost concept. It may be that the real costs of a commodity are made up largely of the utilities that might be created by using the productive goods elsewhere. But it is quite another thing to say that the supply prices of a commodity are made up of the demand prices of alternative commodities. Utilities and products are quantitative concepts; we may speak of aggregate utilities and aggregate products. Demand, supply, and value are relative concepts; we may not speak of total demand, total supply, or total value. It was because Professor Knight thought in terms of alternative demand rather than in terms of alternative product or alternative utilities that he was led into error. Opportunity costs and pecuniary costs from the entrepreneur's standpoint may be useful ideas; but they should not obscure the truth in the old proposition that

the demand for commodities is not the demand for labor.

To sum up: if Professor Knight's supply curve means what a supply curve is supposed to mean, it leads to predicting a rise in the price of any commodity produced under competitive conditions if the normal demand is increased. This prediction is erroneous, because it does not take into account the facts that economies of an industry may be affected and that productive goods are released by the reduced demand for some other commodities.

III

The purpose of the third part of the present paper is to justify the assumption — to be used later in the treatment of problems of maximum satisfaction — that there are cases of increasing cost, and to justify the use of the concept of consumers' surplus. Not long ago, perhaps, the assumptions of increasing cost and consumers' surplus would not be questioned by those familiar with the technical terms of economic theory and with the facts of economic life. Recently, however, these assumptions have been questioned in articles in the *Economic Journal* and in the *Quarterly Journal of Economics*.

I find myself in almost complete agreement with the argument on increasing cost presented by Professor Piero Sraffa in his instructive article on "The Laws of Returns Under Competitive Conditions," published in the *Economic Journal* of December, 1926. Professor Sraffa's argument has greatly strengthened my growing belief that "as a simple way of approaching the problem of competitive value, the old and now obsolete theory which makes it dependent on the cost of production alone appears to hold its ground as the best avail-

able,"³ and that cases of constant cost are not to be relegated "to the category of theoretically limiting cases which in reality cannot exist."⁴ In the course of my discussion of Professor Knight's argument,⁵ I have indicated the possibility of constant cost, and I believe that the conditions making constant cost possible are found in the production of many commodities. In regard to the emphasis on cost of production, it may be added that we should recall the old, almost forgotten doctrine that the demand for one commodity consists of the supply of other commodities, and remember that the cost of producing the other commodities has much to do with the demand for the one. The utility doctrine, in my judgment, has much more light to throw on the allocation of resources among the various commodities than on exchange value.

On increasing costs, Professor Sraffa's argument is as follows:

As regards diminishing returns [Professor Sraffa is using this term as the equivalent of increasing cost], . . . if in the production of a particular commodity a considerable part of a factor is employed, the total amount of which is fixed or can be increased only at a more than proportional cost, a small increase in the production of a commodity will necessitate a more intense utilization of that factor, and this will affect in the same manner the cost of the commodity in question and the cost of other commodities into the production of which that factor enters; and since commodities into the production of which a common special factor enters are frequently, to a certain extent, substitutes for one another (for example, various kinds of agricultural produce), the modification in their price will not be without appreciable effect upon demand in the industry concerned. If we next take an industry which employs only a small part of the "constant factor" (which appears more appropriate for the study of the particular equilibrium of a single industry), we find that a (small) increase in its production is generally met much more by drawing "marginal doses" of the constant factor from other industries than by intensifying its own utilization of it; thus the increase in cost will be practically negligible, and anyhow it will still operate in a like de-

3. Page 541.

4. Page 541, n. 1.

5. See above, p. 179.

gree upon all industries of the group. Excluding these cases, and excluding — if we take a point of view embracing long periods — the numerous cases in which the quantity of a means of production may be regarded as being only temporarily fixed in respect to an unexpected demand, very little remains: the imposing structure of diminishing returns is available only for the study of that minute class of commodities in the production of which the whole of a factor of production is employed.”⁶

To this admirable statement of the sphere of increasing costs, I would make only two slight additions, one limiting the sphere still further and one somewhat extending it. If very similar commodities utilize small amounts of the common factor, it may be that the unit cost of one of these commodities will not increase at all in response to an increased demand. It is possible that that increased demand for one of these commodities involves a decreased demand for a similar commodity, which releases the common factor for the production of the first commodity. The increase in cost is not merely “practically negligible”; it is nil. Thus there is not one cost curve for a commodity, but several. The cost of increasing the production of a commodity depends upon the adaptability to its production of the resources released by the reduced demand elsewhere. For example, the cost of producing more wax beans in response to an increased demand is not the same whether the corresponding decrease is in the demand for green beans or in the demand for peas.

To extend the sphere of increasing cost, I should add that a small increase need not be practically negligible. The ratio of the increase in cost to the increase in output may be high, even tho both the increases are themselves small. As Professor Pigou says in discussing Professor Sraffa’s argument on decreasing cost, “There is no reason why the ratio between two quantities which are

both of the second order should not itself be of the first order." ⁷

Professor Pigou did not apply this idea to increasing cost. He holds that cost discussions must deal only with commodities which individually employ so small a proportion of each of the several factors of production that no practicable changes in the scale of their output could sensibly affect the relative values of these factors. By a different process of reasoning he reached a conclusion which goes far beyond Professor Sraffa's. He decides that "with this class of commodity, it is *impossible* for production anywhere to take place under conditions of increasing costs." ⁸ Cost discussions must be restricted to this class of commodities, for the economist has no unit of cost which can be used to discuss other classes. Increasing cost involves changes in the relative value of the factors of production. When such changes "are liable to occur in consequence of changes in the scale of production of an industry," Professor Pigou concludes, "it is not possible to assign a clear meaning to costs, and, therefore, is not possible to construct a costs function." ⁹

This statement is a clear and penetrating warning to those who grope their way amidst the obscurity of normal value. Despite the warning, I shall try to find a clear meaning for increasing cost and to grapple with the problem. The question hinges on the concept of cost. If we start with Professor Pigou we must follow him all the way.

If [he writes] we were concerned with a commodity produced by labour alone and if all workpeople were exactly similar, it would be natural and proper to measure costs in terms of the quantity of labour employed. But in real life practically all commodities are pro-

7. "The Laws of Diminishing and Increasing Cost," *The Economic Journal*, xxxvii, 195 (June, 1927).

8. Pages 192, 193.

9. Page 192.

duced by the joint operation of several different factors of production, and it may well happen that the proportions in which these are severally employed are different for different scales of output. Hence some unit is required by means of which a combination of, say, the use of so much labour, of so much capital, and of so much land can be expressed in a single figure. There is no difficulty about this provided that, for the period relevant to our problem, the relative values of the several factors of production remain constant.¹

If we accept this, we must accept Professor Pigou's conclusion.

Professor Pigou has included, among the possible elements of cost, the use of an amount of land. In more familiar language, he has included rent in cost.² I do not wish to go into the merits of this old and controversial question, or to say that it is false to include rent in cost or to deny that it is sometimes convenient to do so. I only submit the claim that it is not always necessary to include rent, that without including it we may assign a clear meaning to cost, construct a cost function, and obtain a firm basis for predicting the effect of certain changes in the economic situation.³ If this claim be admitted, we may deal with cases of increasing cost.

Let us suppose that no change in relative value of labor and capital occurs in consequence of changes in the scale of production of an industry. This would be the case when labor and capital are completely mobile and, given time, equally well adapted to their new uses. Let us suppose, further, that this labor and capital are applied, at least in part, to a more intensive utilization of land already used for producing the commodity. We have increasing cost and, on such land, more rent. This

1. Pages 189, 190.

2. The argument about average cost and rent, developed earlier in this paper, is not valid against Professor Pigou, if he always includes rent in cost.

3. I doubt if any modern economist who does not include rent in cost would deny that a tax on the rent from land used to grow peas would raise their price, if the rent from the same land would not be taxed when used for other crops.

does not imply a change in the proportions in which the national income is divided between rent, wages, and interest. The transfer of the labor and the capital results in less intensive utilization of the land which was previously combined with them and which is not equally well adapted to the industry in which they are now used. Rent on this land is reduced; and the reduction here may, given certain rates of diminishing returns, exactly offset the increase elsewhere. The change in the allocation of resources may only alter the division of the total rent among the owners of land and may leave wages and interest unaffected.

No great knowledge of the varied requirements of agricultural crops is needed to recognize that regions, farms, and even sections of one farm are not equally adapted to all crops. We may have, therefore, cases of increasing cost where changes in the relative value of the factors of production included in cost are not liable to occur in consequence of changes in the scale of production of an industry. The subsequent discussion is based on the assumption that there are cases of increasing cost and cases of decreasing cost, even tho more commodities show constant cost than was realized a short time ago.

My preliminary remarks on consumers' surplus will not delay us long in approaching the problem of maximum satisfaction. Perhaps none would be needed but for the vigorous attack upon the consumers' surplus doctrine recently published by Professor Harry E. Miller in this Journal.⁴ Professor Miller's view is clearly set forth in his opening sentence:

The group of conventional doctrines that center about the principle of diminishing utility rest essentially upon the notion that, as

4. "Utility Curves, Total Utility, and Consumer's Surplus," *Quarterly Journal of Economics*, vol. xli (February, 1927).

the supply of a good is increased, with an attendant falling off (after a certain point) in the utility added by successive increments, the utility of intra-marginal units is not, generally speaking, affected.⁵

From this starting point, he arrives at a substantial modification of the consumers' surplus doctrine.

The issue depends on the meaning and measurement of marginal utility. If the utility of one unit is 20 and if the utility of a second unit is 16, what is the marginal utility? According to Professor Miller, the answer is 16. But if the utility of the first unit falls to 18 when the second unit is added to the consumer's stock, the marginal utility is not 16, but 14. The total utility of the two is not 36, but 34. To define marginal utility as the utility of the last or least important unit of a stock is an error. Marginal utility is the amount by which total utility is increased when the stock is increased by one unit. If we desire to compare the utilities of the several units of a stock, we may draw what might be called a particular utilities curve; and, if Professor Miller's "various oranges are indistinguishable in the satisfaction they yield,"⁶ the particular utilities curve for them would be a horizontal line.⁷ But we may still have a

5. Page 292.

6. Page 294.

7. It may be instructive to compare the particular utilities curve with the particular expenses curve. Both measure the utility or expenses of the units of a stock. Both are important chiefly for what they are not: the particular utilities curve is not the demand curve and the particular expenses curve is not the supply curve. The particular utilities curve may serve to compare the total utility with the marginal utility multiplied by the number of units; it may measure consumers' surplus. But the demand curve will also do so. The particular expenses curve will, in like manner, serve to measure producers' surplus. This cannot be done — here is the important point — by the supply curve.

After the discussion in the first part of this paper, this point should be obvious enough for cases of constant cost and cases of decreasing cost. But the cases of increasing cost are more troublesome. In such cases, cannot the supply curve be used to measure producers' surplus? If the supply curve indicated, for each unit of the supply, the addition to the total expenses brought about by its production, the area below the sup-

diminishing utility curve. If the utility of both units fell to 16, the total utility would be 32 and the marginal utility 12, and the consumers' surplus would be the difference between the total utility and the marginal utility times the number of units, or 8.⁸ To the extent that it is true that the utility of the intra-marginal units decreases as the stock of a good is increased, to the same extent marginal utility decreases rapidly and consumers' surplus increases rapidly. To the extent that Professor Miller's psychological observations are correct, the concept of consumers' surplus becomes more important.

There are two interpretations of consumers' surplus, and only one will be used in this discussion. One interpretation — not mine — sees the essential idea of consumers' surplus in the fact that when a consumer is able to get a certain amount of a commodity for less than he would be willing to pay for it he is able to buy more of other commodities with the money he is not forced to spend. In the case of one individual and one commodity

ply curve would be the total expenses and the area above it and within the area of total receipts would be producers' surplus. This would be the case if marginal cost is the addition to total cost. This is not, however, Marshall's doctrine. Marshall declared that this area is less than the aggregate rent and that the particular expenses curve (which includes all costs) lies below the supply curve of increasing cost, "for even in agriculture the general economies of production increase with an increase in the aggregate scale of production" (Principles, App. H, sect. 4, n. 2, p. 811. Cf. V, xiii, sect. 6, p. 473, n. 1). According to Marshall, marginal utility is not the utility of the last increment but the addition to the total utility, while marginal cost is not the addition to the total cost but the cost of the most expensive unit.

8. This reply is, I think, only a restatement of Marshall's view. Marshall said (Principles, III, vi, sect. 2): "The fact that each additional purchase reacts upon the utility of the purchases which he had previously decided to make *has already been allowed for in making out the schedule and must not be counted a second time*" (his italics). Evidently Professor Miller interprets Marshall differently, for he finds in the same discussion authority for the claim that Marshall "goes on to assert . . . that the purchase of the additional pounds [of tea] does not affect the utility derived from intra-marginal units" (Quarterly Journal of Economics, p. 296).

this consumer's surplus may be significant. But it does not show that the satisfaction of the community is greater when this buyer gets that part of the total product which the sellers would receive if they were able to exact it. The same amount of product and, presumably, the same amount of satisfaction are distributed differently among the individuals. This is consumer's surplus, not consumers' surplus.

The other interpretation of consumers' surplus, which will be used in this discussion, begins by taking utility as an economic quantity, a common characteristic of all economic goods. Total utility may be increased only by increasing the production of economic goods. (We exclude from present consideration possible changes in the distribution of goods between the rich and the poor and between the appreciative and the unappreciative.) But it is often significant not only to compare the total utilities of two volumes of production but also to compare the total producers' incomes from the two outputs. In the case of a commodity whose elasticity of demand is unity, the benefit of the increased production will go to the consumers alone. In the case of all commodities, the benefit may go to the community in the form of lower prices rather than in the form of higher money incomes. The comparison between the different divisions of the benefit among the receivers of rent, wages, interest, and profits is another matter. Consumers' surplus is the amount by which the total utility of a commodity or of all commodities, as measured in money, exceeds the total prices or the total producers' income, as measured in money. Consumers' surplus can increase only if total utility increases, but all increases in total utility do not increase consumers' surplus. If we do not or cannot apply the money measure, consumers' surplus means at best the excess of total utility over the sum of

utility obtained by multiplying the marginal utility by the number of units. But we should do well to avoid using consumers' surplus to make comparisons where we cannot measure the changes either theoretically or practically.

This conception of consumers' surplus will prove useful in discussing maximum satisfaction. To this last problem we may now turn.

IV

If the arguments of the second and third parts of this paper are correct, we are justified in maintaining the old classes of constant cost, increasing cost, and decreasing cost, and in using the concept of consumers' surplus. And if the argument of the first part is correct, we may recognize that there is rent under conditions of decreasing costs and that, under these conditions, the terms "marginal costs" and "average cost" are both misleading.

We are thus forced to reject the statement of the maximum satisfaction doctrine which comes from so distinguished a thinker as Professor Pigou. In his article in the *Economic Journal*, Professor Pigou writes:

In order to maximise satisfaction — inequalities of wealth among different people and so on being ignored — it is necessary, except in the special case where satisfaction is maximised by a nil output, for that quantity of output to be produced which makes demand price equal to marginal costs, *i.e.*, which corresponds to the point of intersection of the demand curve and the curve of marginal costs. . . . [Professor Pigou is using the term "marginal costs" to mean the additional land, labor, and capital employed.] In all other cases [than the special case] satisfaction will be maximised by an output corresponding to the intersection of the demand curve and the curve of marginal costs. Output, however, *tends* to be carried to the point in respect of which the demand curve intersects with the supply curve. In conditions of constant costs — since, in these conditions . . . the supply curve and the curve of marginal costs coincide — that will be the right point. But in conditions of decreasing costs,

where the supply curve coincides with the curve of average costs, it will not be the right point. Unless the State intervenes by a bounty or in some other way, output will be carried *less far* than it is socially desirable that it should be carried."⁹

My only new comment on this statement will be to point out that it does not show where the money for the bounty can be obtained without decreasing satisfaction, or prove that the decrease there is not greater than the increase of satisfaction caused by the bounty.

This criticism of Professor Pigou's conclusions is not valid against Marshall's exposition of the effects of a tax on a commodity showing increasing cost and of a bounty on one showing decreasing cost.¹ In Marshall's statement, the tax decreases consumers' surplus by less than the total amount collected from the tax-payers, while the bounty increases consumers' surplus by more than the amount turned over to the producers. And it follows that where the tax is used to raise the bounty and is equal to it, the consumers' surplus is greater than before. In Marshall's treatment, however, the tax and the bounty are not treated together as one problem; he follows the one-thing-at-a-time method and takes the tax and the bounty as separate cases.

As a result, Marshall's exposition of the effects of a tax on a commodity produced under conditions of increasing cost is inconclusive. The results of the tax on the volume of production, on price, and on consumers' surplus are clearly shown. But other effects, which might upset the delicate calculation of aggregate satisfaction, are not covered. If the tax drives the productive factors into other industries than the one subsidized, the volume of production, price, and consumers' surplus of the commodities produced there will be affected. If the consumers of the commodity taxed spend either

9. Page 197.

1. Principles, V, xiii, sect. 4.

more or less on it, the demand for other commodities will be affected. The effects of the tax on the producers are also not stated fully. The decrease in their money income from the production of this one commodity is seen clearly enough, and Marshall himself points out that the total receipts from the tax are less than the combined loss in producers' money income and in consumers' surplus.² The loss in consumers' surplus to the producers which arises from their loss in money income is not shown at all. What has happened except a transfer of purchasing power from producers and consumers to the state? Is there any real gain from the reduced production of the commodity? If the state left the allocation of resources unchanged but took by taxation the entire economic rent and distributed it, the landowners affected would lose and the rest of the community would gain. Is it a "gain" of this sort that results from a tax on a commodity produced under conditions of increasing cost? Marshall's exposition does not make it easy to answer these questions.³

The following discussion of the maximum satisfaction problem will endeavor to answer the questions that Marshall left unanswered and also those that he did answer. It will treat the tax and bounty problem as one problem, a problem of multiple equilibrium. It will assume conditions which leave the money income of the community unaffected by the changed allocation of

2. Principles, V, xiii, sect. 6, n. 1.

3. The essential ideas of the criticism of Marshall's exposition I owe partly to my friend and fellow student, Mr. Robert B. Wolf, who developed some of them in the course of a discussion in Professor Taussig's class (where most of my thoughts on economic theory began), and partly to Professor A. A. Young, who introduced some of these ideas into economic literature in his well-known review of Professor Pigou's *Wealth and Welfare*, in the *Quarterly Journal of Economics*, xxvii (1913), 672-686, esp. p. 683. It will be noted that the above criticism of Marshall is that he left questions unanswered, not that he answered any questions incorrectly.

producers' goods and services. The consumers will spend neither more nor less on the commodities concerned. They will not have more to spend on other commodities; consumers' surplus in this sense will not confuse us. The producers of the commodities concerned will not have their money incomes, their consumption of other commodities, or their consumers' surplus affected. The economic rent from the production of the two commodities concerned need not change; and if it changes at all, it will be a source of gain or loss to the workmen, business men, or capitalists in the industries, not to the consumers of their products.

The receipts from the tax on one commodity will be used to provide the bounty for the other. The intervention of the state will be seen to bring about a change in the allocation of resources, a change which means a gain in physical product and in consumers' surplus. The significance of the consumers' surplus concept will thus be emphasized. Most important of all, the possibility of such a gain will be found in other cases besides those in which the tax is levied on a commodity produced under conditions of increasing cost and the bounty given to one produced under conditions of decreasing cost.

All this will be accomplished by the aid of a simple, tho possibly heroic, piece of abstraction. We shall assume that the demand schedules for the two commodities are the same and that the demand is neither elastic nor inelastic, that is, that the elasticity of demand is unity. The two commodities are unlike in other respects; one is not a substitute for the other, and the amount purchased of the one has no effect upon the demand for the other. This assumption avoids the problem of the effects of different demands and eliminates the suspicion that the results are those of elastic or inelastic demand. It permits us to deal with the effects of the state's intervention

on prices, allocation of resources, physical output, and consumers' surplus. The nature of these effects, tho not their extent, is not dependent on the assumption; but without it there would occur other changes with which we are not concerned here. The assumption permits us to deal with all the results by limiting the effects to two commodities and to be sure that our conclusions are not vitiated by many slight effects elsewhere. The methods and the conclusion are essentially the same as Marshall's, but the demonstration is more precise and the conclusion is somewhat broader.

The effects of a tax on a commodity produced under conditions of increasing cost and of a bounty on one produced under those of decreasing cost may be ex-

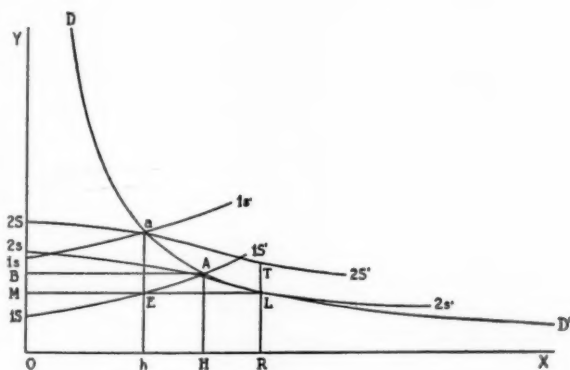


FIGURE 2

amined with the aid of Figure 2. The demand, DD' , is the same for each commodity. Commodity 1 is the one taxed; it is produced under the conditions of increasing cost $1S1S'$. Before the tax was imposed, the volume of its production was OH and its price was AH . When this

commodity is taxed at the rate of aE per unit, its supply curve becomes $1s1s'$. The volume of production is now Oh and the price ah . The proceeds of the tax are aE times Oh . This amount is used in subsidizing, at the rate TL per unit, commodity 2, produced under conditions of decreasing cost. The first equilibrium price of commodity 2 was ah , and its volume of production Oh . The effect of taxing commodity 1 is that it is now produced to the same extent as commodity 2 was produced before subsidized. The bounty lowers the supply curve from $2S2S'$ to $2s2s'$, the new price is LR , and the new volume of production is OR . As a result of the tax and the bounty, there is a gain in physical product HR and a gain in consumers' surplus $ALMB$. A tax on a commodity produced under conditions of increasing cost and a bounty to one produced under conditions of decreasing cost increase satisfaction; the unhindered competitive allocation of resources does not maximize satisfaction.

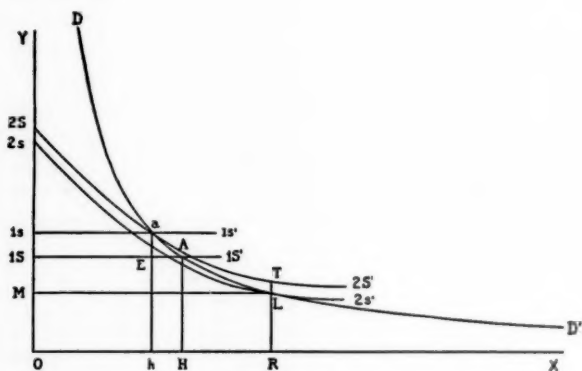


FIGURE 3

Let us next examine, in Figure 3, the effect of a tax on

a commodity produced under conditions of constant cost and a bounty to one produced under conditions of decreasing cost. The effect of taxing commodity 1 at the rate aE is to reduce its production from OH to Oh . The effect of subsidizing commodity 2 at the rate TL is to expand its production from Oh to OR . The gain in product is HR ; in consumers' surplus it is $ALM1S$. In this case, too, the unregulated competitive allocation of resources does not maximize satisfaction.

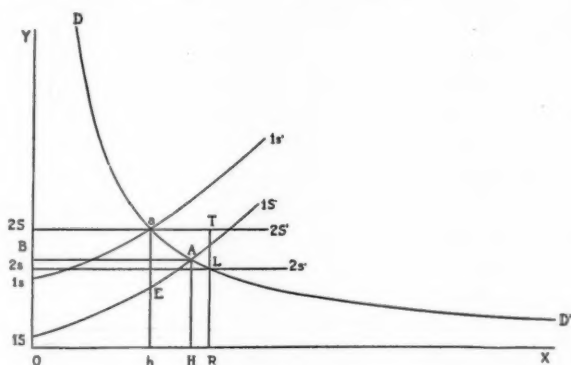


FIGURE 4

In Figure 4, the tax is on a commodity, 1, produced under conditions of increasing costs, and the bounty is to another, 2, produced under conditions of constant costs. Here again the output of commodity 1 is reduced to the quantity Oh , which was previously the output of commodity 2. The effect of the tax and the subsidy is to increase product by HR and consumers' surplus by $AL2sB$. Here again, therefore, the uncontrolled competitive allocation of resources does not maximize satisfaction.

In Figure 5, the tax is on a commodity, 1, produced

under conditions of sharply increasing costs and the bounty is given to the other, 2, produced under conditions of gradually increasing costs. The effects of the changed allocation of resources are here comparatively slight, but they are a gain, HR , in product and a gain, $ALMB$, in consumers' surplus.⁴

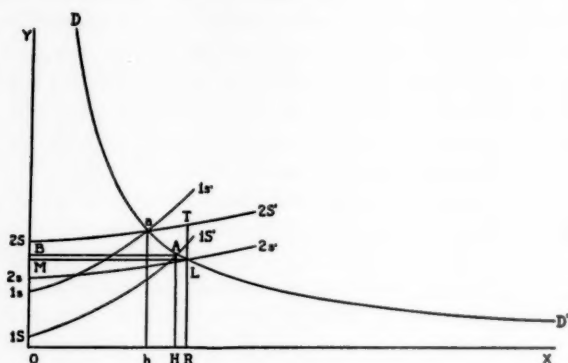


FIGURE 5

The general conclusion to be drawn is, therefore: to the extent that there are commodities not produced under conditions of constant cost, and to the extent that the cost conditions vary from constant cost and from one another — to that extent the uncontrolled competitive allocation of production factors results in less satis-

4. It may be well to bring to light another assumption used in all the above cases. The assumption is that the tax on commodity 1 does not drive land into any use except producing articles 1 and 2. This assumption is necessary to eliminate effects upon other commodities. It amounts to the assumption that the land necessary for the increased production of commodity 2 may be easily obtained from that used in producing article 1. It does not, need not, and could not mean that all the land originally used in producing article 2 is equally suitable for producing article 1. The assumption is, I think, necessary only for convenience of exposition; it does not affect the nature of our results.

faction than the maximum obtainable from those factors.

This conclusion is a blow at *laissez-faire* based on abstract reasoning. It is not a blow at *laissez-faire* based on an adverse judgment on the knowledge, intelligence, persistence, and virtue of states. From the standpoint of such *laissez-faire*, the obvious objection to the above conclusion is that the state has been assumed to act in a way that the state does not and will not act. To this charge that bias in favor of state intervention has been contained in the premises, the only reply can be to point out that the consumers and producers have also been assumed to do their best in their respective rôles.

But is the reply correct? Has not a bias against the competitive allocation of production factors crept in through our use of the one-thing-at-a-time method? We have assumed that we may start with the consumers' demand for a commodity before we (and they) know the conditions of its production. Have we not thus ruled out the possibility that the sensible consumers will change their demand schedules when they learn about conditions of production? The state has acted in the light of knowledge of conditions of both demand and supply; the producers' supply schedules and the consumers' demand schedules have been treated as entirely independent. We have proceeded mechanically, rather than biologically. Does not this method introduce bias?

The answer to the question cannot be definite. It is a matter of judgment. My own opinion is that the method is defective, that bias has been introduced, but that this bias in favor of state intervention is not solely responsible for the conclusion in its favor. It is going too far in the other direction to assume that well-informed consumers, competing for their share of a commodity,

can dispense entirely with the unified action and coercive authority obtained through state action. To assume this would certainly introduce bias against state action. Tho weakened somewhat, the main conclusion still stands. Of course, if the state does not act that way, if the premises are incorrect, the conclusion is erroneous — that is, if the reasoning is not fallacious.

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STATISTICAL ANALYSES AND THE "LAWS" OF PRICE

SUMMARY

Economists have been skeptical as to the real significance of statistical price analyses. Simplified assumptions as to nature of price determination are partly responsible, 201. — Marshall's treatment was nearer to the concrete facts, 202. — Definition of the market in time and space has an important bearing upon the meaning of the data, 203. — Actual events represent constant flux, not successive static periods, 203. — Statistics can reveal only current adjustments, not final equilibria, 203. — The type of the adjustment varies with the length of the period, 204. — The prices which directly affect production and consumption are frequently not the central market prices, 205; and non-economic factors also are involved, 206. — A curve of supply-and-price may be determined from observations in successive intervals, 207; even if demand is changing, 208. — The curve of supply-and-price is not the theoretical demand curve, 214; since reservation demands by producers may be regarded either as a demand-schedule or a supply schedule, 215. — With regard to a price fixed by total supply, reservation demands are part of the demand schedule, 215. — But this schedule may be resolved into its components by proper statistical analyses, 216. — This involves determination (a) of the effect of price upon supply, and (b) of the effect of price upon storage, consumption, and withholdings, 217. — Price also has an effect upon subsequent production, 219. — Such changes in production are usually more important than immediate adjustments of supply to price, 220. — This is true even of durable goods, 221. — Statistical measurement of the effect of price upon production illustrated, 222. — Statistical measurements of economic reactions do not yield absolute laws, 223. — This analysis refutes some previous criticisms of the logic of statistical price studies, 224, and of the methods, 225; and indicates the statistical cautions needed to give reliable results, 226.

It is a far cry from the "Political Arithmetic" of the late eighteenth century to the statistical analyses of the current decade; yet many present-day economists feel that the newer methods are as yet but little more fruitful than were the old. "Political arithmetic led no-

where."¹ It may be well to call into question the pretensions of the newer method, and see whether it gives any greater promise of results of enduring value.

The central problem in economics is the problem of price. If the newer statistics can carry economic knowledge of the "laws of price" further than the neo-classical theory has done, then certainly it cannot be denied a place in the arsenal of the economist. If it cannot aid in the solution of this crucial problem, then it is much to be doubted if it will prove particularly valuable elsewhere.

It seems inevitable that there should be some conflict in thought between the non-statistical economist and the statistically trained investigator over the attempt to apply statistical measurements to price-determining forces. The economist may feel that the statistician has rushed in with complicated mathematics to man handle material which he did not really comprehend; while the statistician may feel that the economist distrusts his results solely because the statistical methods were new and strange. Only recently have there been specific attempts to bridge the gap between economic theory and statistical measurement. Recent papers² on the philosophy of statistical price studies have made a beginning in this direction; this present paper is an attempt to carry the synthesis still further forward.

Much of the discussion of the meaning of "statistical demand curves" has been based on the assumption that the prices with which the statistical studies deal were determined in markets operating exactly like the hypo-

1. Jacob H. Hollander, "Adam Smith, 1776-1926," in *Journal of Political Economy*, April, 1927, p. 160.

2. Holbrook Working, "The Statistical Determination of Demand Curves," *Quarterly Journal of Economics*, August, 1926; Elmer Working, "What do Statistical 'Demand Curves' Show?" *Ibid.*, February, 1927; F. F. Elliott, "The Nature and Measurement of the Elasticity of the Supply of Farm Products," *Journal of Farm Economics*, July, 1927.

thetically simple markets described by the early classical economic writers. Such a market-place, it will be remembered, consisted of a group of buyers and sellers. Some of the buyers were ready to buy at one price, and some at another, and some of the sellers were ready to sell at one price, and some at another; so putting all together, there was a supply schedule of the increasing quantities which would be sold as prices increased, and a demand schedule of the decreasing quantities which would be bought as prices increased. After the bids and offers were all finished, the price would be fixed at that point where the quantities sold and bought were identical. This elementary example is, of course, familiar to all students and teachers of economics.

It should be noted that in this hypothetical market all reactions are instantaneous; a higher price at once calls out more sellers, and a lower price at once calls out more buyers. They must be instantaneous, or otherwise the two curves would not reach the static balance which is the end and goal.

Marshall, starting with this "higgling of the market" as his price mechanism, has gone much further in explaining how prices actually work out. He pointed out that "the conditions of supply will vary with the length of time to which reference is made,"³ and that "oscillations about a position of stable equilibrium,"⁴ rather than an exact equilibrium of supply and demand, are to be expected in actual experience. This led him to his development of the differences between "normal" when used in different senses, to his distinction between short-time and long-time normal prices, and finally to his idea of quasi-rents for durable productive goods. In all of this discussion he made much more realistic the

3. *Principles of Economics*, 8th ed., Book v, Chap. 3, p. 342.

4. *Ibid.*, p. 356.

idea of the balance of quantities supplied and of quantities demanded, and provided a splendid "jumping-off place" for the analytical statistician of today.

In using Marshall's theories as an hypothesis in the statistical analyses of prices, much confusion has been due to lack of clarity in defining the exact scope and content of the particular problem to be studied. For purposes of analysis some particular price must be selected to serve as the specific object of study. Business transactions are actually made up of a series of multitudinous transactions, which but rarely can be considered individually in a statistical price study.⁵ Some statistical representation or average of a number of transactions must ordinarily be selected. That involves the question both of the extent of the *area* and of the *period of time* within which transactions are to be considered, and the *manner* in which they are to be reduced to a single summary statement. This last point is largely one of statistical technique, and tho important, may be left out of present consideration. But the other two raise economic questions which have direct bearing upon the whole meaning of the study.

In selecting the *area* to be considered, statisticians usually have had in mind an economic market, "the whole of any region in which buyers and sellers are in such free intercourse with one another that the prices of the same goods tend to equality easily and quickly."⁶

5. In the following pioneer studies, individual transactions are considered with regard to the relation of the qualities or characteristics of each separate item to the prices paid; G. C. Haas, "Sale prices as a basis for farm land appraisal," Minnesota Agricultural Experiment Technical Bulletin, 9 (1922). W. J. Kuhrt, "A Study of Farmer Elevator Operation in the Spring Wheat Area," Series of 1925-26, Part II. "Analysis of the Variation in the Quality Factors of the 1925 Crop of Spring Wheat, and the Relation of such Variation to Prices Received and Premiums paid in 1925-26," U. S. Department of Agriculture, Bureau of Agricultural Economics. Preliminary Report, October, 1927.

6. Marshall, Book v, Chap. i, p. 324.

Yet it is difficult to decide the exact limits in any concrete case. Thus prices for livestock at Chicago and at St. Paul usually move closely together. Yet the prices at the two places do not move exactly together; specific local factors have their effect; so from certain points of view there are two "markets" and not one. The period of time considered is itself tied up with this question of exactly what the place-scope of the price should be, as will be shown directly.

The decision as to the period of time which the average is to include involves implications which are rarely fully stated. If we were dealing with ideal markets in a static world, all prices would be unvarying, and the length of time would be immaterial. If we imagine an otherwise static economy in which particular individual perturbations occur from time to time, — say varying crop yields, — sufficiently far apart so that after each change the market could adjust itself to the new condition, and reach a new static equilibrium, then it would be easy to decide that each one of these periods represented a different market situation, and that the length of each period constituted the *time* within which "prices of the same goods tend to equality." But the dynamic world of actual experience presents no such succession of separate periods, each one reaching its own equilibrium. Instead, there is a constant succession of new influences, and constant modification of the old, so that prices are always changing *toward* that point at which they would stabilize if the existing situation were allowed to work itself out to a static equilibrium, in an otherwise changeless world.

The statistician can deal with the continuous flow of events only by arbitrarily chopping them up into successive periods, and by taking the situation in each one of these periods as representing an adjustment to the

conditions of that period. Yet the average price, or any other representative price for the period, does not exactly represent the final equilibrium point which might be reached in the sense of a static economics. From the dynamic point of view it does represent the current adjustment of the market to the current supply; the next instant, however, conditions will have changed and a new adjustment will be under way. For that reason, actual analysis of economic happenings is restricted to determining just how these current adjustments are related; while we may philosophize as to what the ultimate static equilibria would be, we have no basis in concrete facts by which to verify such speculations.

Since separate periods must be used, the character of the adjustments which the averages of the period represent will vary widely with the length of the period. The price of cotton on the day following the issuance of a crop forecast may very largely reflect that particular estimate, with no reference to the rate at which cotton is being marketed. The average price of cotton over the period of an entire crop may represent the adjustment of the market to the total supply produced and marketed, in something of the same sense that the successive static periods suggested above represented successive static periods of equilibrium. Finally, the average price of cotton during a decade within which no material changes in technique were introduced might represent something of an equilibrium price sufficient to call forth the usual supply.

The time and space elements are interrelated in that local forces which may effect prices for short periods may have time to equalize themselves during longer periods. Thus, with regard to daily price averages, Chicago and St. Paul are by no means part of the same livestock "market"; with regard to monthly averages, the differ-

ences are much less marked; and with regard to yearly averages all significant factors are practically identical. Exact delimitation of the "market," both in time and space, thus has a very important bearing upon the significance of any statistical conclusions.

Further, one needs to recognize that for many products the prices that bear on the producer are not the same as the prices that bear on the consumer, and are not determined in identical markets. Taking wheat, for example, as representative of a commodity sold under as freely competitive conditions as prevail for any product: the markets in which the producer sells vary among themselves because of differences in local competition, in the efficiency of local elevators, in the extent to which premiums or discounts for variations in quality are reflected back to the producer, and so on. For grain of identical characteristics, there are at any one time much greater differences (even after allowances for transportation are made) between the prices different producers receive than there are between the prices which are paid for the same grain on the central markets.

As with the producer, so with the consumer; between the central market and the retail purchaser, differences in millers' costs and profits, in bankers' margins, and in retailers' charges, come in, as well as transportation expenses; and all serve to vary what the consumer will pay. It is well known that retail prices lag considerably behind wholesale prices, and are much more nearly stable. There may be relatively large changes in the wholesale price of grain with no change in the retail price of bread, and there may be significant changes in the price of bread at times when wheat prices are undisturbed.

In considering prices, therefore, it must be recognized that neither the price which affects the quantity consumed, — the price paid by the ultimate consumer, —

nor the price which affects the quantity produced, — the price received by the producer, — is usually arrived at in markets which are identical with the central wholesale market. It is true that the forces of demand and the forces of supply are thrown into the sharpest relief at that point, and so the workings of the "law of supply and demand" may be most readily observed there; yet it must be remembered that for many commodities it is not the wholesale prices themselves, but other prices only partly dependent upon them, which affect production and consumption. Working backward from the central market prices to the prices paid producers, or working forward to the prices charged consumers, many particular, local, or individual elements are introduced which are not present in the central market situation, and yet which will influence the prices at either end. There are thus two zones, starting with clear-cut definition where they touch at the central market, which shade off to greater and greater indefiniteness of price-determination and price-effect as they approach the outer limits of individual producers and individual consumers.⁷

One further complicating fact, which Marshall also notes with his Jehovahian breadth,⁸ is that prices are not the only cause of changes in supply or in demand. Purely extraneous and non-economic causes, such as climatic vagaries,⁹ political changes, or mob-like "crazes,"¹ may at times have much greater influence upon sup-

7. E. G. Nourse, "Normal Price as a Market Concept," *Quarterly Journal of Economics*, xxxiii, 632, August, 1919. A discussion of some ways in which actual markets differ from theoretical ones is given in the article by F. W. Taussig, "Is Market Price Determinate?" *Ibid.*, xxxv, 394, May, 1912.

8. *Ibid.*, Book v, Chap. in, pp. 346, 347.

9. During the last twenty-five years a larger part of the differences in annual production have been due to differences in yield per acre than to differences in acreage, for every major American crop except winter wheat.

1. Arthur H. Cole, "Agricultural Crazes," *American Economic Review*, December, 1926.

plies than do prices themselves, whereas the intangibles that make up "style" and "business optimism," or new discoveries or fads, may influence consumption as much as or more than prices do. Only by recognizing that these non-pecuniary elements are present, and by allowing for their effects, can we hope to measure the manner and the extent to which prices actually do control production and consumption.

The demand curve. Can curves which are identical with the demand curve of economic theory be determined by statistical analysis? The demand curve of theory shows, for any one instant in time, the varying quantities which the purchasers would purchase if they could be obtained at various specified prices. But only one price can prevail at any one instant (in a perfect market), and only a certain quantity can be actually purchased at that price. Only by observing the market over a number of successive periods, and by noting the prices prevailing and quantities sold during each of those periods, can the statistician obtain any indication of the nature of the relation between price and supply. If the assumption is made that during each of such successive periods no change takes place in the position of the curve showing this relation, then its shape may be determined by placing these successive observations on the same chart, and fitting a curve to them. Figures 1 and 2 (pages 208 and 209) illustrate this process. It should be noted that even this is not necessarily the true curve; we merely *infer* what the curve is by observing these successive intersections of supply and demand, and assuming that the curve existing at any one time may be judged from the several price and supply positions in successive intervals. Figure 3 (page 209) illustrates the unchanging curve projected through the several periods of Figure 1.

In actual experience, of course, demand never remains unchanged. It may grow with growing population; it may vary up and down with the business cycle; it may shift from week to week or day to day with temperature

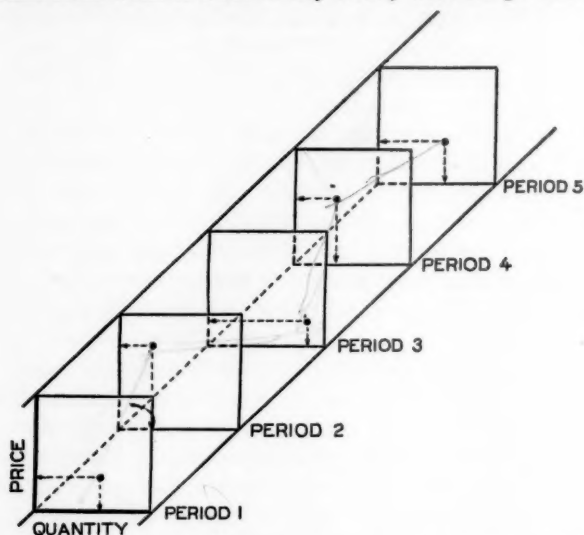


FIGURE 1. Prices paid and quantities sold in each of several successive periods of time.

or other fortuitous causes, or with shifts in the supplies and prices of alternative products, or it may change suddenly and violently from any one of a number of other outside causes.

Figures 4 and 5 illustrate the effect of a steady growth in demand upon the "statistical demand curve."²

2. The data used in drawing figures 1 to 7, and 10, may be of interest. They are as follows:

Period	Quantity	Price with constant demand	Price with increasing demand	Deviations of last price from trend
1	4	2	2	-1.0
2	2	5	6	+2.0
3	6	1.5	3.5	-1.5
4	2.5	4	7	+1.0
5	4	2.5	6.5	-0.5

Figure 4 shows exactly the same relations between price and quantities purchased as does Figure 3, except for a regular upward shift in the demand schedule. If the prices and quantities for the several periods shown in

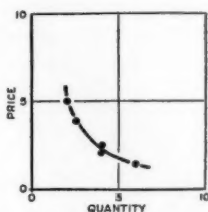


FIGURE 2. Prices paid and quantities sold, from successive periods, plotted together on a single chart, and a curve drawn through them.

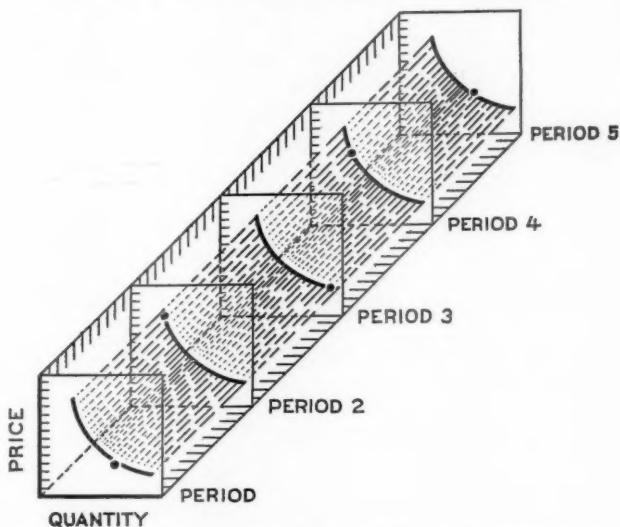


FIGURE 3. Prices paid and quantities sold in each of several successive periods of time outlining an unchanging curve of supply-and-price.

Figure 4 are all thrown together, as shown in Figure 5, there is no clearly marked relation between price and quantity. It is obvious that the shape of the underlying curve shown in Figure 4 can be determined only if the change in demand is taken account of in some way. In

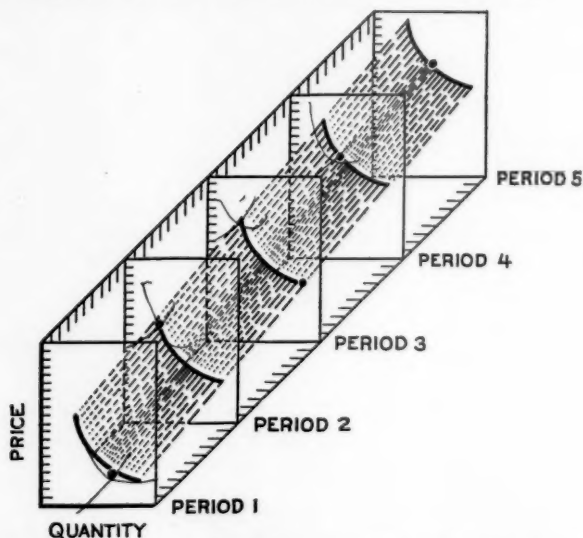


FIGURE 4. Prices paid and quantities sold in each of several successive periods of time outlining a *rising* curve of supply-and-price.

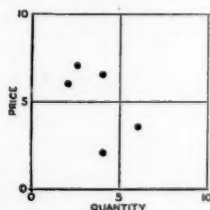


FIGURE 5. Prices paid and quantities sold (from Figure 4) plotted on one chart without correction for increasing demand.

this particular case a simple trend correction is all that is needed to show the *shape* of the underlying demand curve for *any* moment, even tho its *position* is constantly changing³ (Figures 6 and 7). In cases where the changes in demand are more complicated and less obvious than in this example, the statistical problem is less easy.

This simple illustration shows that it is possible to make allowances for some types of changes in demand,

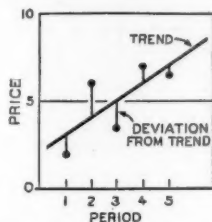


FIGURE 6. Prices (from Figure 4) plotted in chronological order, and straight line trend fitted.

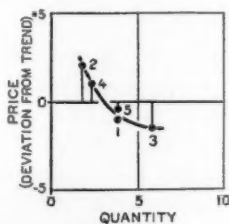


FIGURE 7. Deviation from trend of prices paid each period plotted against quantities sold each period. (From Figure 4 and 6.) The numbers indicate the period which each observation represents.

3. The correction for the trend in demand is made as follows: The prices in successive periods are plotted (Fig. 6). A straight-line trend is then fitted to them, as indicated. The deviation of the price for each period from the trend, as shown in Fig. 6, is then plotted against the supply for that period, giving the dot chart shown in Fig. 7. It is necessary to determine the trend of demand simultaneously with the measurement of the effect of other factors when supplies or other causal factors show a trend in time, as well as prices.

so that it is not necessary to retain the assumption of an unchanging demand. Instead, all that need be assumed is that the position of the curve is changing in such a way that the change can be measured and eliminated, so that then at least the *shape* of the curve, and its position *at a specified time, or under specified conditions*, may be inferred from the corrected data.

We may now defer for a time the greater complexities involved in the actual statistical mechanics of analysis, and consider just what type of demand curve, if any, may be inferred from the curves which such statistical analyses obtain.

For an annual crop such as cotton, the supply might be taken as the current year's production plus carry-over from the previous year, and the price as the average central market price during the usual marketing season for the crop. How closely would the curve derived from such supply-price figures, after necessary statistical adjustments for changing demand had been made, conform to the true demand curve?

The cotton bought in the central markets is not necessarily all bought to be used immediately. Some is bought for mills which will spin at once, some for mills which will store until other years, while some is bought by speculators who may store or sell as they see fit. If spinning the cotton be regarded as actual consumption, then there may be a material difference between the relation between price and the quantity consumed, and the relation between the supply available and the prices prevailing on the central market.

For one thing, the carry-over into the next crop may be expected to vary with the price. When cotton is scarce and prices are high, none will be bought for speculative storing, and supplies already in storage may be reduced. On the other hand, when cotton is plentiful

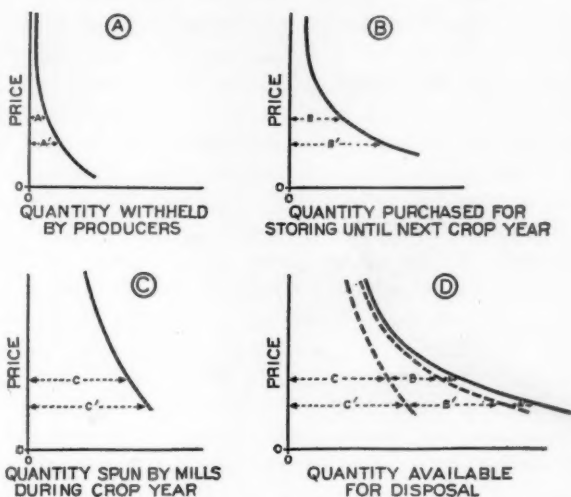


FIGURE 8. Analysis of the several curves which add to give the curve of supply-and-price.

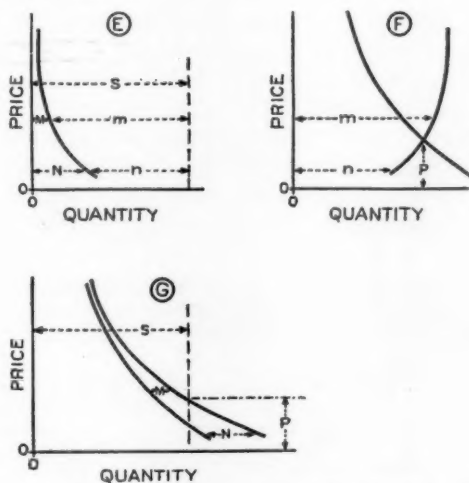


FIGURE 9. Relation of reservation demands (E) to the instantaneous supply curve (F) and to the curve of supply-and-price (G).

and prices are low, considerable quantities may be purchased to be carried over to later years, either by the mills themselves or by speculators. In addition, many producers may elect to hold their cotton rather than sell it. Figure 8 illustrates the different components which may be reflected in the market demand. A represents the varying quantities which producers will withhold at different prices; B represents the quantities which will be purchased for carrying over into the next crop year as price varies; while C represents the effect of price upon the quantities which mills will spin during the year.⁴ Adding these three different quantities together for each separate price gives the relation shown in curve D. This shows the *annual supplies which the whole market can handle at various prices*, regardless of whether it is "handled" by being retained by the producer, stored by a mill or speculator, or spun by a mill.

This last curve is obviously what we get when we compare total supplies and market prices. It is by no means a "demand curve" in the classical sense of the term. The curve of price-and-mill-consumption (C) plus the curve for speculative or trade holding (B) comes much closer to that. Obviously, too, the total curve (D) in this illustration is much more elastic than is the curve C which shows mill consumption, the superior elasticity of farm withholdings and storage takings at low prices off-setting the inelasticity of consuming demand at those prices.⁵

4. Here the prices are all regarded as coördinate, since cotton prices vary together quite closely. Actually, prices to producers range one half-cent to one cent lower than corresponding central market prices, on the average.

5. This analysis of the cotton market is not purely imaginary. See U. S. Dept. of Agriculture, *Foreign Crops and Markets*, November 8, 1926, pp. 625-630. The curve on page 628 of that passage is of type D (and G); the curve on page 629 is of type C; while the curve on page 630 represents type A and B added together. (These curves were rather roughly determined without the statistical refinements necessary for exact work.)

It should be noted that the curve A of Figure 8 may be stated either as a supply curve or as a portion of the demand curve, as is illustrated in Figure 9. The essential condition to which this figure applies is that the time represented must be short enough so that during that period the quantity of the commodity in existence or potentially available to the market cannot be changed *in response to prices of that same period*. The total available supply is then a fixed quantity, S , as indicated in E of the figure. But tho the total quantity is fixed, the quantity which producers will refuse to sell (M , N) and the quantity which they will sell (m , n) both vary with price, the first increasing as prices are lowered, and the latter decreasing. The quantity (M) withheld at any given price, plus the quantity (m) released at that price, is obviously always equal to S , the total quantity in existence.

Now if we wish to illustrate how prices are determined with regard to the demand of those who buy *from* producers, we can set the demand curve for those purchasers over against the supply curve of quantities which producers will release at any given price. That is illustrated in F of Figure 9. Here the quantities sold by producers at any given price (m , n , etc.) are just the same as before, except that now they are measured from the zero axis to the left. The intersection of the two curves, of course, gives the price P as the ordinate.

But if, instead, we wish to illustrate how prices are determined with regard to the total supply available, regardless of whether it is sold by producers or withheld, we can construct a new curve by adding the quantities, M , N , etc., withheld by producers at any given price, to the quantities which will be bought from producers at those prices, giving the new "curve-of-supply-and-price" shown in G of the figure. Then, setting the total

supply S over against this curve, we get the resulting price P, which is exactly identical with the price obtained by the other statement.

These three charts lead to the conclusion that Wicksteed and Holbrook Working, on the one hand, and the classical economists and Elmer Working, on the other, are both talking about exactly the same situation, except that the latter state the relation as shown in the F chart, whereas the former state the relation as shown in the G chart. Since these are two different ways of stating exactly the same thing, both are equally correct.

From the point of view of the meaning of "statistical demand curves," however, the two statements are quite distinct. So long as only the total supplies and average prices are used in the analysis, statistical analysis can reveal only the last type, the "curve-of-supply-and-price." If, however, direct measurement can be made of the response of producers or of purchasers to various changes in price, then the total curve can be resolved into its components of true demand curve, and reservation demand curve of producers, and the "instantaneous supply curve" itself can be determined.

Demand for consumption likewise may further be subdivided into as many small separate segments as any particular interest requires. Thus the relation of cotton price to consumption by American mills may be quite different from the same relation for foreign mills, and the latter may be still further divided into the relations for Great Britain, India, Japan, and so forth. Or it might be desired to separate the demand by grades of cotton, or by type of product, and so on *ad infinitum*. Each variety, grade, staple type, area, and use has a different curve all its own, and each curve may be of interest for a particular use. It is evident that the smaller the scope considered, the more additional factors would

be involved; competition between British and Japanese mills might have little influence on the total world demand, and yet have a very significant effect upon the demand by either country by itself.

It is apparent that the term "the demand curve" may mean any one of a number of specific price-and-quantity relations. For purposes of statistical analysis, it seems desirable to group these relations in two broad classes as follows: (1) those which relate to a central market price and take into account all the elements which affect that price; and (2) those which relate to the effect of a given central market price (or the related jobbing or retail price) upon the quantity which is purchased or consumed in a given area or region, or by a given type of consumer, or of a certain stated quality.

The major distinction between the two groups is that in the first we attempt to determine the effects of varying quantities, business conditions, prices for alternative commodities, and so on, on the central market price. That is, we regard central market price as the result, or *dependent variable*, and the other factors as the causes, or *independent variables*. The relation determined is not a true demand curve, as has been pointed out; it is merely a *curve of supply-and-market-price*, for given conditions as to other factors.

In the second type, on the other hand, we attempt to determine the average effect of varying prices, business conditions, and the like, upon the quantity purchased or consumed by the particular group of buyers to whom we have restricted our study. The price used should be the price to which that group of buyers actually reacts. For example, changes in the price of wool may have little or no relation to the number of men's suits sold at retail; hence the wool price would not be the one to use. We here regard price (properly chosen) and the

other factors involved, as causal or *independent variables*, and the quantity purchased or consumed as the resultant or *dependent variable*.

It is true that in the actual workings of competitive markets there is no such exact distinction between price as a result and price as a cause. The somewhat arbitrary distinction between the two types of relations is made necessary by purely practical considerations. In the first place, statistical analysis has not yet provided a satisfactory means of measuring the nature of relations between variables which are in shifting equilibrium with each other, but which cannot be regarded either as cause or as effect.⁶ Particularly if the effect of other forces involved is to be taken account of or eliminated, it is necessary to regard one factor as the result, and study its relations to other factors, to see how far changes in one or all of the others are reflected in this one. True, we can, if we wish, then turn around and see how far changes in the first factor are reflected in changes in the other one. In one sense, that is what we would do if we should first determine curve D (Figure 8) from a study of the influence of supplies on market prices, and curves A, B, and C, from a study of the effect of market prices upon quantities withheld by producers, quantities stored by other agencies, and quantities consumed by mills. If in this way we accounted for all possible avenues of disposal, if all other elements than price had been properly accounted for, and if there were no significant errors in our data, we should expect to find that curves A, B, and C added to give us curve D — which would check the result by the two different methods of approach. We should then have a complete

6. Methods of determining the nature of relations between two variables which assume that the measurements of *both* variables are equally apt to vary because of errors, approach this problem, but there is serious question whether they are really satisfactory. See below, p. 226.

analysis of the whole series of relations which were involved, even tho we arrived at that result by first considering one sector of the problem, and later considering another sector.

Besides the two types of statistical price analysis mentioned, there is a third type which must be studied separately. This third type covers the question, what effect do changes in price have upon the quantities which will be *produced for sale*? The previous discussion of the supply curve has been explicitly restricted to periods so short that there would not be time for production to respond to the prices of those periods. Under these limitations the elasticity of supply applies solely to the rate at which the existing supply is released for sale. But price also has a profound effect upon *subsequent* production; and it is to that effect that this third type of study applies.⁷

The lag in the effect of price upon production is due to the obvious fact that time must be allowed for new production to take place, varying with the technical details of the process. Production of some manufactured articles may be increased in a matter of days or weeks, others take much longer; some forms of continuous

7. Examples of such studies of the effect of prices upon subsequent production are given in the following:

B. B. Smith, "Forecasting the Acreage of Cotton," Journal of the American Statistical Association, March, 1925.

Sewall Wright, "Corn and Hog Correlations," U. S. Department of Agriculture Bulletin 1300, 1925.

G. C. Haas and Mordecai Ezekiel, "Factors Affecting the Price of Hogs," U. S. Department of Agriculture Bulletin 1440, 1926.

F. F. Elliott, "Adjusting Hog Production to Market Demand," University of Illinois, Agricultural Experiment Station Bulletin 293, pp. 514-532 (1927).

A. R. Gans, "Elasticity of Supply of Milk from Vermont Plants," Vermont Agricultural Experiment Station Bulletin 269, 1927.

Wm. A. Schoenfeld, "Some Economic Aspects of the Marketing of Milk and Cream in New England," U. S. Department of Agriculture, Miscellaneous Circular 16, pp. 34-50 (1927).

livestock production (such as milk or eggs) may be increased in a few months; high prices for a crop cannot influence acreage till the next crop is planted; a house or a building cannot be erected overnight, while many years may be required to increase the output of tree products. It was precisely this type of response that Marshall had in mind when he discussed the long-time relation of price to supply, and showed that in the end it was the costs which lay back of production which, when related to prices received, determined production, and so, through quantities produced, eventually had their influence on market price.

Changes in production due to earlier changes in price are usually more important in the market than are changes in the rate at which the existing supply is being sold. It is information on the total crop of cotton, and the total carry-over from the last season, for which the speculator eagerly waits and on which he bases his calculations as to where the price will trend, rather than information as to how rapidly the producers are selling their product or how quickly it is coming to market. The quantity is in existence and in due time it will be sold; under most conditions, that is the main thing he wishes to know. At particular moments, of course, a shortage of "spot" cotton may develop, or there may be an accumulation of actual supplies, and in either case they will have some bearing on price. But this explains only the minor vagaries; the major movements have regard to year-to-year (or estimate-to-estimate) changes in total supply, and not to rate of movement.

This is true in even greater degree of more perishable agricultural products. Once a given crop of vegetables or fruit has been produced, or a given shipment of livestock has been sent to the central market, the producer has little option as to whether to sell or hold. The prod-

uct is there, and it must be sold; the total quantity produced or on the market is the quantity which sets the price, quite regardless of the producer's wishes in the matter.

Even in the case of durable goods, such as oil or cotton cloth or automobiles, the case seems to be much the same. Profits are made, not by holding goods for higher prices, but by continuous production and sale. Once goods are made, they are sold, even if "at a loss." Supplies are adjusted to price by curtailing production if prices are unsatisfactory, or by increasing production if prices are high; but it is a forward-looking adjustment. High prices today mean larger supplies tomorrow. With the modern development of hand-to-mouth production and distribution, it is not so much to variations in stocks in storage as to variations in output that we must look for changes in supply.

A simple illustration of the measurement of the effect of price at one time on supplies at another may be obtained from the data used in Figure 1. Figures 2 and 3 illustrated the curve of supply-and-price which these data gave when supplies and prices are compared simultaneously. Comparing *successive* periods instead (Figure 1), we notice that the price was low in period 1, and the supply was low in period 2; the price was high in period 2, and the supply was high in period 3; and so through the rest. Systematizing this comparison by plotting the prices of each period (as ordinates) against the supplies of each following period (as abscissae) gives the relation shown in Figure 10 (page 222).

Assuming that the data represent an annual crop, such as cotton, and that the periods are successive crop years, the curve indicated in Figure 10 would show the extent to which the production of one crop responded to the price paid for the previous crop. Of course, this is an

idealized simplification of what is usually found; other factors besides price influence producers' actions; producers' actions do not completely determine the volume of output; and so the reaction to price alone will not be quite as clear cut as that shown here.

In actual studies of the effect of prices upon subsequent supplies, two types of reactions can be studied separately. These are (a) short-time effects of price

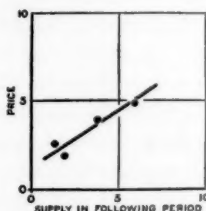


FIGURE 10. Prices paid in one period and supplies available in next period as indicating a supply curve. (Data from Figure 1.)

upon the movement to market of supplies already in existence, and (b) long-time effects of price upon the production of new supplies. Both are distinct from the relation of price to the quantity of supplies *already available* which will be offered for sale or withheld for a higher price, tho of course the first class shades into this.

The two subdivisions may be readily illustrated by a livestock example. When prices of hogs are high for a week or so, producers tend to accelerate the movement of hogs to market, while, when they are low, they tend to hold them back. There is a margin of several weeks to a month or so as to just when the hogs will be sold, and within this limit there is a rather marked short-time response of supplies to price. Once on the market, however, they must be sold within a day or two; so the immediate response of supplies to price is very limited.

When prices are high for a considerable period, however, and costs (among which corn is dominant and outstanding) are low, producers are encouraged to expand production; more sows are bred; some months later, a larger crop of pigs is farrowed (absence of disease and favorable weather permitting); the hogs are fattened out; and in another six to twelve months the increased supply of hogs reaches the market. There is thus a lag of from one to two years between a change in hog price and the most important difference in market supplies caused by that change. At the same time, if producers have borne in mind still earlier experience, it may happen that the prices two and even three years previous, as well as the prices of the preceding year, will influence their decisions and so have some relation to the changes made.

In concluding this discussion of the relation of supplies to price, of price to consumption, and of price to subsequent production, it should be noted that the results obtained by statistical determination of the relations are not fundamental "laws of nature" in the same sense as is the law of gravity. They are measures of the way that particular groups of men, in the aggregate, have reacted to specific economic conditions during a specified period in the past. If the study is elaborate enough, it may even reveal the way in which the reaction has been changing during the period considered, and the direction and rate of change. But it does not tell how long the same reaction will continue to prevail, what new causes may arise to change the responses, or what the relations would be in the new situation. The theories of mathematical probability do not apply. All that can be said is that under these particular conditions this group of men has been reacting in this specific way; and that until something occurs to make them

change it seems most likely that they will continue to react in somewhat the same way.

The points set forth in this article may now be considered with regard to the criticisms of statistical studies of prices made by Elmer Working.⁸ His examination of hypothetical situations led to the conclusion that "statistical 'demand' curves" might show either the supply curve, the demand curve, or both inextricably mixed together, and that statistical results would therefore have to be used with great caution if at all.

The hypothetical cases upon which these criticisms were based, however, apparently assume that *all* changes in supply occur simultaneously with the change in prices which call them forth (or at least in the same statistical period with those changes). This present article shows that changes in supply which occur at a subsequent period are, in general, much more important than those which occur simultaneously with the price change. Only what might be termed the "instantaneous supply curve" could possibly be involved in the way Working fears.

The analysis presented here also shows that the instantaneous supply curve, when stated as reservation demands instead, really becomes part of the total supply-and-price curve, which can be then measured by the statistical approach.

This analysis indicates that "correlated shifts in demand and supply schedules," which Working feared might completely invalidate many price-analysis studies,⁹ are not so likely to cause trouble as he thought. The only supply schedule to which this possibility applies is the instantaneous readjustment of supply to price, which really is a reservation demand schedule

8. In this Journal, February, 1927.

9. *Ibid.*, pp. 220-227, 234, 235.

(Curve A, Figure 8). If changes in this schedule are correlated with changes in schedules B or C, then it becomes part of the problem to find out what factor or factors are responsible for the shifts in the position of the schedules, and make allowance for them while determining the shape of the curve. Where the effect of price on consumption or takings by a particular group of purchasers is concerned (Curves B or C) then only the particular factors which may be responsible for shifts in the demand curve of that particular group need be considered, as the accuracy of the results is not influenced by the fact that the same force or forces may also affect the quantities which producers will hold off the market, or the quantity still to be produced, which will be available on the market *at some future time*.

The point of view presented in this paper is also of interest with regard to the adequacy of the statistical determination of the curves. Schultz¹ has laid great stress upon the necessity of using methods which assume that the observed values of *both* variables (supply and price) are equally likely to vary because of errors in measurement. Thus, if this philosophy were applied in the crudest way to the data illustrated in Figure 5, a line would be determined by mathematical means which assumed that the deviations of both variables from the line were equally due to random causes. Yet in this particular case, as is readily seen in Figures 4, 6, and 7, the variations in price are not due solely to supply and to random causes, but to changes in supply *plus the changes in demand*. Any analysis which left this latter factor out would give erroneous results.

Similarly, in actual analytical problems we have to deal with prices which vary not only with supply and

1. Henry Schultz, "The Statistical Law of Demand," *Journal Political Economy*, December, 1925, pp. 580-582.

growth in demand, but with many other factors, such as the value of money, the prices of alternative products, the prosperity of consumers, and so on. To assume that the effect of these other influencing factors are simply "random errors" is to shut our eyes to the facts of the case. We must recognize that other factors are involved, and use such statistical methods as will allow us to determine the true effect of supply itself; not on the assumption that all changes are due to it, but on the assumption that the changes which are associated with supply, after measuring and removing the effects of other factors, are due to it, and the changes which are associated with other variables are due to them.²

To summarize: (1) Statistical analyses of prices must fit the actualities of markets as they are, not as they would be if they resembled the simple examples used by early economic writers.

(2) In most markets, supplies vary primarily because of previous changes in prices and because of changes in non-economic factors. It is through these lagging changes in supplies that prices are kept somewhat in line with expenses of production.

(3) Differences from period to period in the supplies on the market and the prices prevailing indicate the curve of supply-and-price. The available quantities at any time set the price with reference to this curve.

(4) Reservation demands of producers may be regarded either as part of the supply-and-price curve or as an instantaneous supply curve. Studies of price may regard (a) central market price as the dependent vari-

2. An extended discussion of the assumptions, implications, and possibilities of statistical methods for dealing with several causes operating simultaneously will be found on pages 233 to 239 of "Factors Related to Lamb Prices," *Journal of Political Economy*, April, 1927, by the present author. Incidentally, this present paper is largely an expansion of the ideas set forth somewhat tersely on pages 245 and 246 of that article.

able, and determine how supplies and their factors influence that price — this yields a curve of supply-and-price; or (b) take quantity purchased or consumed by a specified group of consumers as the dependent variable, and determine how the prices paid by those purchasers and other factors influence the quantity to be taken — this yields the demand curve for that group of consumers; or (c) may consider quantity produced or placed on the market as the dependent variable, and determine how antecedent prices and other factors influence that quantity — this yields a long-time or short-time supply-curve.

(5) Extraneous elements are present and cannot be ignored. The statistical technique must be adequate to consider all the elements present, and to determine the relations sought, in spite of the confusion caused by these other elements.

(6) The data to be studied can be obtained only from a dynamic and evolving society. They represent the way men have been responding; the response may have been changing even during the period under study, and may change still further in the future. This must be recognized in the preliminary analysis, the statistical technique must be adequate to treat it, and the interpretation of the conclusions must not lose sight of it.

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FOURIER AND ANARCHISM

SUMMARY

I. Revolutionary groups in their attitude to science. Pretensions of anarchism to scientific method, 229. — II. Social sciences and modern anarchism draw from a common source, the conception of natural law, 231. — Ways in which this conception has been used, 235. — Reasons for the sharp divergence of anarchism from the point of view of students of the social sciences, 237. — III. Fourier's system is essentially anarchistic, 241. — The characteristics of his anarchism in its use of the idea of a natural order, 243. — The natural order of Fourier as an equilibrium of passionnal attractions, 250. — IV. Distinctiveness of Fourier's anarchism. His romanticism, 156. — His modernism, 260. — Criticism and summary, 261.

I

It is the claim of almost every social revolutionary group — socialist, syndicalist, communist, anarchist — that its method and its aim are in close accord and sympathy with the methods and aims of the natural sciences. One has only to recall the "scientific" basis and rigor of Marx's demonstration of the inevitable decline of capitalism, to observe the "scientific" attitude of Georges Sorel and other syndicalists, to listen to the claims of Bolshevik theorists, or read the writings of Peter Kropotkin, to be convinced of this fact. Our existing order of society, according to these thinkers, is either the haphazard, chaotic product of unregulated interests, or the creature of a minority group utilizing its power, however acquired, for the exploitation of the majority. It will be their purpose, on the other hand, to bring order out of chaos, liberty and equality out of exploitation, the ideal order of the future

out of the miserable order of the present, by the observance and practice of those methods which have created our scientific knowledge of the universe.

Even tho this future state be the inevitable outcome of material forces, rather than of the spiritual power of ideas, scientific or otherwise, it is the function of revolutionary leaders, by a scientific study of these forces, to demonstrate to the proletariat the inevitability of its path to power. The enormous prestige of the natural sciences during the nineteenth century is at the bottom of most of these claims of relationship from revolutionary groups. Whether one of them, anarchism, is the legitimate or illegitimate offspring of modern science we shall have occasion to discuss. It is the purpose of the first part of this paper to consider in a very general way certain characteristics of the methods and aims of modern anarchism¹ and its relationship to the natural-law philosophy of the eighteenth century. In the second part, I shall attempt to illustrate from the writings of Fourier certain of the general statements made in the first.²

The anarchists have been particularly insistent on their relationship to science. And it is true that anarchism and modern science have together³ drawn from the same source, from that conception of the universe which was the creation of seventeenth- and eighteenth-century philosophy: the conception of the physical world as a self-regulating, self-adjusting mechanism, and of society also as a self-adjusting mechanism of independently if not rationally acting individuals. The thinkers of the eighteenth century applied to the prob-

1. It would not be pretended that all anarchist writings fall within the outlines of this analysis.

2. I am indebted to Professor A. A. Young and my colleague O. H. Taylor for helpful suggestions on the 18th-century view of the natural order.

3. See Gonnard, *Histoire des Doctrines Economiques*, vol. iii, chap. 12.

lem of society the ideas and methods which had been found effective in the natural sciences, and this is what anarchism itself claims to do. In Kropotkin's words,⁴

Anarchism is a conception of the Universe based on the mechanical interpretation of phenomena, which comprises the whole of Nature, including the life of human societies and their economic moral and political problems. Its method is that of the natural sciences, and every conclusion it comes to must be verified by this method if it pretends to be scientific. Its tendency is to work out a synthetic philosophy which will take in all facts of Nature, including the life of societies.

There is, in other words, a natural order in the social as well as the physical world, and the future anarchist state represents simply a proposal to build a society in which man can live according to the rules of his nature. This implies a scientific study of the nature of man in society. As Elisée Reclus puts it,⁵

The dream of earthly liberty has ceased to be a philosophical and literary utopia; it has become the end actively sought after by large numbers of united men, who join resolutely in the establishment of a society in which there will no longer be masters, official preservers of the public morals, jailers or executioners, rich or poor, but brothers having their portion of the daily bread, equality in their rights, and supporting themselves in cordial agreement, not by obedience to laws, accompanied by threats and menaces, but by mutual respect for each other's interests and by scientific observation of natural laws.

It may, perhaps, be supposed in some quarters that the task which anarchism sets itself, the description and explanation of the nature of man's behavior in society, is that which it is the intention of the so-called social sciences — economics, politics, ethics, social psychology, jurisprudence — to perform. But this is a misapprehension, or, according to anarchism, if this is the intention of the social sciences, that intention is so badly carried out that these are unworthy of the name science.

4. *Modern Science and Anarchism*, p. 38.

5. *L'Anarchie* (Paris, 1896), p. 7.

The admiration of anarchists for the methods and accomplishments of the natural sciences does not extend to the social. "By applying the method of the natural sciences," says Kropotkin,⁶

we are enabled to prove that the so-called "laws" of bourgeois social science, including present political economy, are not at all laws, but simple suppositions or affirmations that nobody has ever attempted to verify. In fact, some of their most essential would-be laws crumbled to pieces as soon as they were submitted to the test of numerical data taken from a study of real life.

The expositors of these pseudo-sciences are too often the hired defenders of the *status quo*, and when they are not that, they are too frequently devotees of the "metaphysical" or "dialectic" rather than the "inductive-deductive method — the only scientific method."⁷ The economists, tho often enough well-intentioned men, would appear to be furthest from an apprehension of the scientific method. They, "being unaccustomed to use the scientific, inductive method, even do not realize what a 'natural law' is, altho they very much like to use this expression."⁸

II

Now, as it happens, the modern science of economics, if we may call it that, has, in certain respects, grown from the same roots, from the same approach to the study of man in society, which produced and nourished modern anarchism. The eighteenth-century conception of a natural social order, an economic order, a political, an ethical order, parallel and related to the natural physical order, was a conception which helped in laying the foundation for the science of economics. As Kropotkin and other nineteenth-century anarchists main-

6. Modern Science and Anarchism, p. 41.

7. Ibid., p. 40.

8. Ibid., p. 77.

tain, this conception also underlies the structure of modern anarchism. It will therefore be pertinent to look into this conception of a natural order and the use to which it was put both by economists and by anarchists.

The idea of a natural order and of natural law was used in the eighteenth century for three main purposes.⁹ It was used as a weapon of attack upon established authority and convention, as a scientific preconception, a sort of simplified starting-point in the social sciences, and as the description of an ideal order, a conception of what society ought and perhaps some time might be. The first and third of these uses are evaluative; they apply a normative standard, the first serving a negative function in the condemnation of those institutions opposed to the "natural" order of things, the third a positive function in the construction of the end toward which the energy of men should be turned. The second is purely descriptive: it is an attempt to construct a tool useful in the analysis of the nature of human society.¹

The conception of a natural order and natural law undoubtedly arose to prominence in the seventeenth and eighteenth centuries primarily as a weapon of attack against existing authority. It was an age of revolt, and in this revolt the "natural" was opposed to the existing or conventional or customary. Ritchie, who has handled

9. An examination of the structure and content of the economic order as understood by various economists is far beyond the scope of this paper. What I here propose to do is to consider briefly the use to which the idea was put.

1. Littré, in his Dictionary, lists twenty-nine senses in which the word, "naturel" was used in France; but, by regarding these uses from the point of view of function and by defining this function broadly, it is possible to divide them between the three purposes above mentioned. It seems unnecessary to mention that all writers did not use this conception in the same way. In addition to making different creations out of the bare bones of the idea of a natural order, they put these creations to different uses.

this aspect of the idea as well as anyone, distinguishes in it two main elements, (1) an appeal against external authority, and (2) an appeal to the judgment of the individual.² In the field of religion and theology, the appeal is against the authority of the infallible church and is addressed to the judgment of the individual in the interpretation of an infallible Bible. In the field of politics, it is an appeal against the divine right of kings and an appeal for the right of judgment of the individual to determine his form of government by contract with other individuals. In the field of ethics, it is against a revealed code of morals expounded by authority, and in favor of the conscience or judgment or prudence of the individual. In the field of economics, it is an appeal against government control and regulation of economic enterprise, and to the judgment and capacity of the individual in the conduct of economic affairs. In all the branches of political thought and all the fields of social action, "Nature" was evoked to support the cause of individualism and to tear down the battlements of authoritarianism.³

In the classification of the uses of the idea of a natural order given above, no mention was made of that aspect which has played so prominent a rôle, the state of nature

2. Natural Rights.

3. Ritchie insists that it is impossible to understand the eighteenth-century conceptions of natural law and natural rights apart from the historical setting which gave them birth. "They represented revolts against actual, not hypothetical, authorities," etc. This is true to a large extent, particularly as regards the negative use of the idea of a natural order, but in its use as a scientific hypothesis and as the basis of an ideal state, altho it reflects its historical setting, it transcends it, and acquires a meaning which is not limited to that which the actual controversies of the time gave it. Since Ritchie's purpose is the examination of "Natural Rights" and not the whole conception of the natural order, his insistence on the importance of the negative aspect of the idea is understandable, tho, even so, in the general discussion of natural law which introduces the book he seems to allow insufficient importance to the other functions of the idea.

as a supposed historical epoch. The natural man and a good savage were interesting and worthy characters, but they have little importance for our purpose beyond supporting that negative function of the idea mentioned above. A preëxisting state of nature has no necessary connection with the conception of the natural order. To the philosophers of the eighteenth century natural order did not necessarily mean conduct according to the standard ruling in Tahiti, in Oronoko, or on the shores of the Mississippi.⁴ In the writings of those philosophers and political theorists who speak of a once-existing state of nature, the idea is used to support and strengthen their contention that existing institutions are opposed to the natural order of things. This then becomes not only a rational order, but an order which existed before the evils of civilization and authoritarian rule appeared. The state of nature is not so much a "fiction of the philosophers," *qua* philosophers, as a fiction of those seeking the best means of attacking existing authority.

The philosophy of anarchism has often been identified with this negative aspect of the idea of the natural order — the revolt against authority. One might say that anarchism represents the carrying of the idea to its logical conclusions, if there were not so many "logical" conclusions. Free, rationally acting individuals may conceivably, by agreement with one another, construct one of any number of societies ranging from "sheer anarchy" to a state in which complete authority — by common consent, of course — is delegated to one man.

4. It is a fact, however, that the conceptions of a natural order and a state of nature existing at some different time or place were confused and blended together in the thinking of most people. When the French "*philosophes*" accepted Benjamin Franklin as the incarnation of the natural man, those qualities which made him "natural" were understood to be the product of that primitive and uncivilized environment from which he sprang.

The selection of one or another of these possible states by logical means demands more data than are given us and, in particular, demands some analysis of the nature of man, rational or otherwise, and of the nature of authority. One can say, however, that anarchism represents the carrying to its final conclusions of the negative aspect of natural law so far as this implies merely a revolt against *existing authority*.

Nature rejects the monarch, not the man;
The subject, not the citizen; for kings
And subjects, mutual foes, forever play
A losing game into each other's hands,
Whose stakes are vice and misery. The man
Of virtuous soul commands not, nor obeys.

The philosophy of anarchism is connected with the idea of a natural order on more than its negative side. This connection can be made clear only by some consideration of the use of the natural order as a scientific hypothesis, and as a conception of the best possible order; as a method of analysis, and as an end, the *summum bonum*, of conduct. We are here concerned primarily with the natural order in the thought of eighteenth-century economists, tho the idea in these two senses runs through eighteenth-century thought in the whole field of the social sciences.

In a series of brilliant and provocative essays some years ago, Thorstein Veblen maintained that eighteenth-century economists — he was particularly concerned with the Physiocrats and Adam Smith — confused these uses of the idea and employed them interchangeably, to the great detriment of the science.⁵ Putting aside a number of his suggestions of highly questionable validity, which are at the same time irrelevant to the purpose

5. "Preconceptions of Economic Science"; *Quarterly Journal of Economics*, xiii, 121-151, 396-426, and xiv, 240-269. Reprinted in his *Place of Science in Civilization*.

of this paper,—such as the description of the philosophy of these economists as animistic, or of the “economic man” of Adam Smith as hedonistic,—there are in Veblen’s papers a number of interesting generalizations. It is maintained, in the first place, that eighteenth-century economists identified the ideal, divine order with the natural order as a “scientific preconception”; secondly, that this identification destroyed in large part the validity of their scientific work; thirdly, that it was left to the nineteenth century to place economics on a scientific basis by getting rid of this teleological element. With regard to the first generalization, there can be little question that it is, to a considerable extent, true. But that the second and third statements follow naturally as the conclusion of the first, is very much open to question. The unquestionable contributions of the Physiocrats and of Adam Smith to the understanding by their contemporaries, of economic phenomena as mechanically related, would suggest that their use of the conception of a natural order as a scientific hypothesis was not so injured by their conception of it as the order of divine providence as Veblen supposed. The beneficent providence which enters into their notion of the natural order does not necessarily injure its use either as a scientific hypothesis or as a rational standard of conduct, for the God of the Physiocrats and Adam Smith was one who easily accommodated Himself to the operations of a deterministic universe. Having put the mechanism in operation, He left uniformities of cause and sequence to take care of themselves. What one comes to is a conception of an order of society which is natural in the sense of being comparable to the order in the physical world, a self-adjusting equilibrium or mechanism, and also natural in the sense of being rational, conformable to the best possibilities in man.

Now, it is this conception which one finds not only in the thought of eighteenth-century economists but in the thought of modern anarchists. The nature of the order, it is true, in the two lines of thought shows marked differences. Yet they both have one important element in common. The ideal order is identified with that hypothetical order which acts as the point of orientation for their inquiry into the character of the real world. Whether or not this is an unjustifiable procedure, a confusion of thought, destructive of the validity of both method and conclusion, it is not necessary for this paper to consider.⁶

How does it happen, if the idea of the natural order played so prominent a part in the thought both of early economists and of modern anarchists, that the lines of thought diverge so sharply into such different conclusions? There seem to me to be two main reasons for this: (1) the abstractness, the generality, of the ideas from which the various descriptions of the natural order were constructed — a point well brought out by Ritchie;⁷ and (2) the fact that to the economists the scientific or descriptive use of the conception became more and more important, while to the anarchists the ethical or evaluative use has been more significant, with the consequence that different points of view have been emphasized by each.

The central idea of a natural order as being an order composed of free individuals acting in accordance with the dictates of human nature (or, to put it more narrowly, pursuing their own interests with judgment, acting reasonably) was a conception which could lead to

6. It is interesting to note that Pareto, in contrast with Veblen, asserts that, in the thought of Smith, the scientific and descriptive purpose entirely overshadows the ethico-theological. *Systèmes Socialistes*, ii, 46.

7. *Natural Rights*.

any one of many different sorts of society, providing the conception of "human nature" was defined only in abstract and very general terms. It was a characteristic of the natural order that it was cognizable *a priori* through an understanding of man's nature.⁸ This meant that the essential elements of the natural order could be understood only through a thoro-going examination of man's nature—through a study of psychology, and particularly social psychology. And, of course, this was one of the primary interests of the political philosophers of the eighteenth century. Adam Smith, in his *Theory of the Moral Sentiments* and the *Wealth of Nations*, is conducting an extensive inquiry in social psychology. From this study emerged a conception of the nature of man, and consequently of the natural order, very different from the ideas of the anarchists. It is possible to see this divergence without going outside the eighteenth century. In 1793, Godwin attempted, in his *Political Justice*, to lay down a natural or ideal order along anarchist lines in a system based entirely on an inquiry into the nature of man. That his order was considerably different from that of Adam Smith is very largely owing to the difference in their views regarding human nature.⁹ When particulars regarding human nature were added to the general concept common to all, the natural orders of different groups assumed their characteristic peculiarities.

The modern anarchist conception of the natural order is at bottom an *a priori* derivation from their conception of the nature of man. In the writings of many

8. H. Sidgwick, *History of Ethics*, p. 161.

9. When Malthus attacked Godwin's whole system, he did so by attempting to demonstrate Godwin's faulty conception of human nature. To Godwin, reason in man had practically unlimited control over the passions; his natural order was a society of reasonable men. But Malthus maintained that in one important instance the passions were stronger than the reason.

anarchists there is a comprehensive attempt to work out a description of the ideal society on this basis. It is a grave tho common mistake to suppose that the philosophy of anarchism is destructive of all order: it is destructive only of the existing order. As we shall see in the second part of this paper, anarchist society itself may consist of a very intricate system of human relationships. Anarchists find their evidence for the nature of man as they see him in those spontaneous human relationships sanctified by habit, custom, tradition, but not authority.

The second main reason for the divergence of the anarchist idea of the natural order from that of the economists is the importance which the latter have increasingly assigned to the scientific use of the idea. The natural order may not only be deduced *a priori* from the nature of man — it may also be recognized *a posteriori* from its general acceptance by society. Natural law, therefore, may be the inductive generalization of experience. And, of course, the natural order of Adam Smith and of the economists who followed him was mainly constructed in this way. Partly because of the intellectual traditions of their science, springing as it did from the natural-law philosophy of the eighteenth century, and partly from an examination of the structure of existing economic society, economists have found it, and do find it, convenient to start from a simplified economic order in which the distribution of the agents of production comes about by the conduct of individuals acting independently of, and in competition with, one another.¹ This simplified society rests on a political and economic anatomy which could, perhaps, be deduced *a priori* from a knowledge of human

1. See J. M. Keynes, *End of Laissez-faire*, p. 28, for a discussion of this hypothesis.

nature but, as a matter of fact, has been constructed by that inductive-deductive method common to all science. Economists have found it necessary for their purpose, which has been primarily descriptive and analytical and only secondarily concerned with the ends of economic conduct, to check their deductions by an examination of the facts. And this necessity, I suggest, has led to a natural order very different from the natural order of the anarchists.

This antithesis between a natural order arrived at by deduction from the nature of man and a natural order arrived at by inductive generalization from the facts of society involves, to a large extent, a confusion of thought, and it is a confusion of thought inherent in the eighteenth-century theory of natural law. By the nature of man, both the economists and the anarchists could mean nothing other than the general uniformities of human conduct observable somewhere in society. A complete knowledge of the "natural" man could give us nothing else than a complete picture of the "natural" order, and *vice versa*, because the information involved in both cases is identical. Without entering into the question whether or no man's nature is influenced, if not determined, by society, it can certainly be demonstrated that there is no antithesis between man's nature and the institutions created by man. The eighteenth century set the natural order, which to most was the rational order, over against the conventional, existing order. Existing institutions were bad if they were contrary to the nature of man. The difference between most of the natural-law philosophers of the eighteenth century and modern anarchists was simply that to the latter all existing institutions, sanctioned by authority, were bad, while to the former only some of them were bad. The natural order of Adam

Smith, for example, possessed as a framework a political and economic structure of some complexity, sanctioned by authority. The nature of man is necessarily to be found in his institutions.

The anarchists, it is true, are willing to see a certain amount of nature in convention and custom, in so far as this is the product of what they would call spontaneous agreement between men. Kropotkin points to such institutions as learned societies and coöperative ventures of various kinds as being examples of anarchical institutions, and thinks he sees the growing importance of such institutions. This indicates an attempt on the part of anarchists also to arrive at their conception of the natural order by observing the behavior of men in society. The essential peculiarity of their philosophy is a refusal to see anything rational or natural in the agreement of individuals to bestow authority on certain human agencies. While both the anarchists and the eighteenth-century economists take a contractual view of society, they differ in the proportion of existing society that they are willing to include in this view. To describe the persistent uniformities of social life involves a consideration of the totality of human institutions as natural; to construct an ideal future state out of the miserable present necessitates a rejection of much of our existing order as unnatural. The predominant descriptive and analytic aim of economics has gradually moulded a conception of the natural order widely divergent from the predominantly ethical and evaluative conceptions of anarchism.

III

In the writings of Fourier are to be found these characteristics of anarchist thought, together with some interesting peculiarities of his own.

He is usually classified as a socialist in the histories of socialist and economic thought.² To open a discussion, however, on the similarities and differences between socialism and anarchism, and to attempt to relate the thought of Fourier to various possible definitions of either term, would involve a long and unprofitable rehash of the literature of the subject. My idea of the relation of Fourier to anarchism will become clear through the following consideration of his writings.³

Fourier's thought fits very easily into the anarchist use of the conception of the natural order which I have sketched in the first part of this paper. This is true despite his sparing use of the terms "natural law" or "natural order." His order, or system, which is based on the natural "passions" or "springs of action" in men, is used to illuminate and to condemn the artificial and conventional weaknesses of existing society. To this

2. For example, H. L. Haney, in his *History of Economic Thought* (New York, 1911), p. 330, lumps Fourier uncritically with a number of French and English socialists. Gide and Rist, *History of Economic Doctrines* (trans., New York), put him along with Robert Owen and Louis Blanc, in a chapter entitled, "Associative Socialists." M. Gide, who has made a thoro study of Fourier, and who has written a penetrating introduction to *Les Oeuvres Choies de Fourier*, calls him a socialist, it appears, because of the moderateness of his views on property and inheritance, views which are very different from the usual anarchist position. However, they are also different from the usual socialist position. R. Gonnard, *Histoire des Doctrines Economiques* (Paris, 1922), iii, 43, calls him a "liberal socialist." Pareto, *Les Systèmes Socialistes* (Paris, 1902), vol. ii, chap. 11, includes him with More and Proudhon in a chapter on "Scientific Socialism."

3. The following pages are based primarily on a study of *L'Unité Universel*, which occupies four of the six volumes of his *Oeuvres Complètes* (Paris, 1846), and contains the essential elements of Fourier's theory. The Complete Works are, however, by no means complete. Fourier was a prodigious writer, and a large number of his shorter essays appeared either in the Phalansterian journals, or were printed later from his manuscripts by his disciples. For a complete bibliography see Bourgin, *Fourier* (Paris, 1905). I have also found useful the popularizations of Fourier's thought in Victor Considerant's *La Destinée Sociale* (Paris, 1847), and in A. Brisbane's *The Social Destiny of Man* (Philadelphia, 1840), and his *Theory of Universal Unity* (New York, 1850[?]).

end he draws, in common with his eighteenth-century predecessors, on a mythical state of nature which he christens "Eden," or "terrestrial paradise,"⁴ existing at a time previous to those four stages of human development — savagery, patriarchy, barbarism, and civilization — which were, and are, marked and marred by the use of authority and restraint. Whether or no he believed in the historical existence of this epoch, we have no means of knowing. Certainly he exhibits more evidence than this of an astonishing credulity in the course of the development of his system. This system, again in common with anarchist thought, pretends to be a scientific construction based on a careful study of human nature,⁵ and is, at the same time, the ideal order of the future.

The natural order of Fourier, with regard to its form and the uses to which he puts it, comes straight from the political and economic thought of the eighteenth century. Gonnard touches on this when he says:⁶

There are in Fourierism two characteristics which, if they were not combined with others of a totally different origin, would tempt us to call Fourier the last of the Physiocrats. For he, as they, is at the same time impressed with the idea that there is a certain order ordained by Providence and destined to guarantee the happiness of man, and that this beneficent order should be established primarily on an agricultural basis.

Fourier's knowledge of eighteenth-century thought, however, can be described only as half-baked. Passing

4. See *L'Unité Universel*, i, 15. Unless otherwise stated, the following quotations of Fourier are taken from this work.

5. Pareto (*Systèmes Socialistes*, ii, 259), in classifying Fourier among the scientific socialists, observes: "One hesitates to put the system of Fourier among the scientific systems, in view of the extraordinary fantasies it contains, fantasies which would not be out of place in a tale from the 'Thousand and One Nights.' However, the organization proposed by Fourier is represented as deduced from the facts by logical processes; furthermore, Fourier accepts the criterion of experience, he submits himself to it, he invokes it, and he is convinced that his system will emerge victorious from this proof."

6. *Histoire des Doctrines Economiques*, iii, 45.

in his immediate circle as a master of erudition, he was really nourished in his thinking by a superficial reading of the French political philosophers themselves, and by such popularizations of their writings as appeared in the papers and periodicals of his time.⁷ He caught and made his own their "general idea," and it is with respect to this general approach and framework only that his thought resembles theirs.

His use of a beneficent Providence in the fashioning of the natural order is even more pronounced than that of the Physiocrats. Here again, however, God has but set the universe in motion and left it to the reason of man, to science, to discover that order of society conformable to man's nature. This is the problem which Fourier has set himself to solve and he appeals to God to put his stamp of approval on the solution.

The little that has been said on this subject is sufficient to prove that the lever of primordial harmony [which Fourier has discovered] is not a process invented to amuse; it is an imitative method [imitative, that is, of nature], drawn in its entirety from the system of nature, and if one wishes to suspect its excellence, it will be necessary at the same time to suspect the mechanism of the Universe, and the wisdom of its learned creator.⁸

Fourier shared the common anarchist admiration of the method and results of the natural sciences. The Newtonian conception of the physical world as a mechanical equilibrium, a universe in which every atom attracts every other atom, and of which the order of equilibrium is possible of statement in mathematical terms, had the same appeal to Fourier as to the political philosophers of the eighteenth century. He attempted, as they, the application of the same method to the study of society, the construction of a natural order in the social world. Fourier, as did his contemporary, St.

7. This is brought out excellently by Bourgin, Fourier, pp. 60-74, in his consideration of Fourier's sources.

8. iii, 402.

Simon, paraded as the Newton of the social sciences,⁹ altho he was not nearly so successful as the latter in making his pose effective.¹ The atoms of Fourier's social order were the passions or springs of action, and he laid down his system of "passional attraction" on the basis of what purported to be an exact and scientific study of the nature of these passions.

This system of Fourier's, as has been emphasized, was put to the same use as the conception of a natural order in the eighteenth century. It was opposed, that is, in the first place, to the conventional order of existing society. Fourier's attack upon civilization, and upon the false sciences which pretend to study the nature of human conduct, is unflagging. Brought up in a provincial mercantile milieu, losing the bulk of his property in his early twenties, and spending most of the remainder of his life as an obscure clerk and commercial traveller, Fourier had considerable opportunity to observe the workings of the competitive régime, and it filled him with disgust. Bourgeois conduct is a compound of hypocrisy and persistent cupidity. As with most radical reformers, whether socialist or anarchist, his writings are full of attacks on particular economic institutions and practices. But we are not concerned here with his particular criticisms, which are not much more, or less, penetrating than those of numerous nineteenth-century socialists. In general, it can be said that the fundamental reason for the ills of society, whether

9. In the instructions to the sellers and buyers of his book (*L'Unité Universel*) he asserts that "this is a theory as exact as the Newtonian calculations upon which it is based."

1. St. Simon's application of the methods of the natural sciences to the study of society had a considerable appeal to students of the natural sciences in Paris, and he — later, his disciples — gathered a body of young scientists about him, which was the envy of Fourier. Fourier attended a few of the St. Simonian meetings in the hope of attracting this body to his own faith, but was entirely unsuccessful.

political, economic, or moral, is the existence of an order which suppresses and restrains man's natural passions.

All of these impulses are good. "The passions are the work of the eternal geometer: he does not proceed arbitrarily as do Plato and Seneca, repressing this passion and proscribing that. He has not created them uselessly; they have a purpose; and it is necessary to determine this by fixed rules." Existing society is a tissue of habits, customs, and conventions which represent a repression of passions the free expression of which awaits only the discovery and realization of the natural order. Ambition, a propensity which, in our present order, works in the main for evil, could be utilized, in a natural order, for good. Cupidity, justly condemned in our present dispensation, could be made productive of benefit for society and the individual. So, too, the passion for change and variety, disruptive now of all those activities dependent upon persistent application, the passion for intrigue and political maneuvering, destructive of coöperation and united effort, and many others, sources of evil, could be fitted into a societal framework which would make possible their useful application. Marriage, in particular, is a civilized relationship which represses more passions than it satisfies.² Civilization itself is, then, an order of society which contrasts in almost every way with that order which is the law of nature.

Those eighteenth-century philosophers who have condemned civilization most savagely, and who are

2. The modernity of Fourier (so well discussed by Gide in his introduction to *Les Oeuvres Choiesies*), which consists primarily, in my opinion, in the insistence upon self-expression, is nowhere more evident than in his treatment of the relation between the sexes. He draws a sad picture (iv, 462) of the typical civilized marriage, which he contrasts effectively with the free expression of the sexual passion, along with the passion for change and variety, and others, in his ideal state. Rather ludicrously, he feels that he can discuss the sexual situation freely only by transferring his setting to the planet Herschel.

most impatient with existing political and moral philosophy, are praised by Fourier as foreshadowing his discoveries most clearly. Social thinkers preceding him are classified into two groups: the first, which has cleared the ground for future progress, "sophistes expectant," among whom may be named Socrates, Rousseau, and Voltaire,³ have opposed most clearly an ideal order of society to the existing one represented by civilization; the other, "sophistes obscurants," has taken the attitude that this is "the best of all possible worlds," that the ideal order is, perhaps, after all, not very different from the conventional. Unfortunately, most of our political and moral philosophy has been the work of the second group. Consequently, this political and moral philosophy, based upon and supporting, as it does, an order which represses and restrains the passions, must be thrown overboard. Fourier places small value on the body of knowledge which represents the slow accumulation of successive generations of scholars and thinkers. He was fond of that statement of Barthélemy, "These libraries, pretended treasure-houses of human knowledge, are only humiliating depositories of contradictions and errors,"⁴ and would have rejoiced with Comte in the destruction of all books, with a certain few exceptions.

How does it happen that the thought of mankind on the subject of society has been so fruitless of results, so lacking in an understanding of the elementary basis of the natural order? It is simply "because people have neglected at all times the branches of study which would conduct them to it, the analytical and synthetic study of passional attraction. It was misunderstood by the Greeks and the Romans; it has been the same with moderns, servile imitators of antiquity."⁵ This failure

3. ii, 121.

4. See Bourgin, p. 64.

5. i, 9.

to apply reason to the discovery of the natural order is particularly unpardonable in the eighteenth century, "which recommends incessantly the going from the known to the unknown, and which, laying down this precept for the method and manner of investigation, has obstinately refused to apply it to the study of man, has refused to go from material attraction, already known, to passionnal attraction, whose theory is yet to be known."⁶

Fourier himself proceeds to an elucidation of human conduct with a great display of scientific method. He announces at the outset, and often reiterates, that this, his main work, is going to fall into the three general divisions of *Aperçu*, *Abrégé*, and *Traité*. That is, he intends to work out the natural order through a first, a second, and a third approximation, beginning with broad generalizations, commonly accepted, and proceeding to the undiscovered particulars. However, an examination of his book fails to uncover this systematic development of his material.⁷ The general frame-

6. iii, 389.

7. Fourier's thought undoubtedly hangs together well as a logical whole, and it could have been developed systematically from the general to the particular; but, as a matter of fact, it gives the impression of extreme disorder. Added to this, it is confused by an extraordinary vocabulary of Fourier's own invention and by a penchant for analogy which is almost incredible. As an example of his use of analogy, consider the following table of the passions, with the analogies they suggest to Fourier (i, 145). (This table, representing a second approximation in the determination of human passions, excludes the first five, the sensitive passions.)

Table et Analogie des 7 Passions de l'Ame

(6) Ut	Amitié*	Violet	Addition	Cercle	Fer
(7) Mi	Amour	Azur	Division	Ellipse	Étain
(8) Sol	Paternité	Jaune	Soustraction	Parabole	Plomb
(9) Si	Ambition	Rouge	Multiplication	Hyperbole	Cuivre
(10) Re	Cabaliste	Indigo	Progression	Spirale*	Argent
(11) Fa	Alternante	Vert	Proportion	Quadratrice	Platine
(12) La	Composite	Orangé	Logarithme	Logarithmique	Or
* Ut	Unitéisme	Blanc	Puissances	Cycloïde	Mercure

work of his system is very simple and his treatment of it is extremely repetitive. He applies his central idea of passionnal attraction to a large number of particular problems, but there is no continuous development of his thought from the simple equilibrium of a first approximation to the complex equilibrium of a third approximation.

Nevertheless, there is a definite attempt at an application of the inductive-deductive method of science. Fourier takes a consistently contractual view of society. The institutions and conventions of his society come about through the equilibration of calculable motives. The nature of these motives, as seen by Fourier, represents inductive generalizations of experience, his observations of the workings of human nature and of human institutions. And even in his most far-fetched constructions, he insists on the importance of the criterion of experience.

Fourier's conception of the meaning of science comes out clearly enough in his condemnation of contemporary social science. "Political science and economics are theories subversive of destiny, since they cause us to stagnate apathetically in an unorganized [*morcelée*] industrial society, or the state of barbarism and civilization, instead of making every effort to attain our true destiny, which is societal industry."⁸ It appears from this that the laws of science, as understood by Fourier, are, in the words of Veblen,⁹ "in the nature of canons of conduct governing nature rather than the generalizations of mechanical sequence"; or, in the words of Alfred Marshall,¹ they are expression in the "imperative" rather than the "indicative" mood. Canons of

8. ii, 118.

9. See above, p. 9.

1. Principles of Economics (7th ed.), p. 756.

conduct expressed in the imperative mood, they certainly were, but this does not mean, necessarily, that they were not also generalizations of mechanical sequence expressed in the indicative mood. Here again Fourier can be placed in that line of thought which included the Physiocrats, tho it is certainly not true to say, with Gonnard,² that he is the last of that line. To view the natural order as a scientific hypothesis and as an ideal standard of conduct was not held by him to be incompatible, and for the same reasons which determined the attitude, on this matter, of his intellectual predecessors.

The method of approach which made it possible to reconcile these two uses of the idea was, as I have suggested in Part I of this paper, the antithesis they drew between natural and conventional. Since the *whole* of existing relationships was not regarded as natural, the ideal order might be constructed without logical difficulty by inductive generalizations from a part of the existing or conventional order. The laws of this order could be, at the same time, statements of existing invariable relationships and canons of conduct. That there are difficulties to be found in this antithesis between natural and conventional, we have neither to reemphasize nor to discuss.

Fourier's natural order, tho pretending to be constructed by the inductive-deductive methods of science, was considerably different from the natural order of his contemporaries, the economists and political scientists. For the most part it was deduced *a priori* from his theory of human nature, altho occasionally he finds an existing institution or custom which would bear incorporation in the ideal order. The passions or springs of action he approaches through his three approxi-

2. See above, p. 20.

mations.³ The first detects three general groups of passions: (1) sensual susceptibilities to pleasure (in his own expression, the sensitive passions); (2) passions for coöperation, or, as he would say, for grouping (affective passions); and (3) a number of apparently heterogeneous passions which he designates as passions for serial organization (distributive passions), a term which I shall attempt to make clear.⁴ The second approximation divides the first group into the five senses — visual, olfactory, auditory, tactual, and the sense of taste. The second group is analyzed into passions for friendship, love, family relationships (familialism), and ambition. The third group contains the passion for intrigue, for variety, and what he calls the composite passion. In his third approximation these twelve passions become thirty-two. This number is significant, since it determines the ideal size of the *phalanstère*, or community.⁵

However, most of his analytical and descriptive work is done with the second approximation. We can, therefore, fairly omit from this hurried consideration the first and third approximations. Furthermore, after

3. It is a little hard to see what Fourier meant by the passions. I have made "passion" synonymous with the Benthamite term, "springs of action," i. e., faculties or capacities for pleasure.

4. i, 144.

5. This ideal size, according to Fourier's reckoning on the basis of possible passionial combinations, was between 1600 and 1800 persons; he is inclined to explain the failure of Robert Owen's community ventures partly on the ground that the size selected by Owen was faulty. Owen considered 3000 to be the ideal number, and this choice, reasons Fourier, could be based only on a faulty analysis of the passions.

Fourier and Owen have often been lumped together as associative socialists, but they are really, in many respects, at opposite poles from each other. Fourier criticized severely the egalitarian character of Owen's proposals — his own being based on a perception of strong individual differences. Then the voluntarism of Fourier's scheme contrasts strongly with the socialist paternalism of Owen. And Fourier's *phalanstère* was agricultural in its basis, while Owen's community was largely industrial. They are, essentially, as opposed to each other as anarchism and socialism.

naming the items of the first group, the senses, he pays them very little attention. The second group, the affective passions, which he also classifies as cardinal, or again, as industrial, is very important as securing harmony between the members of the various groups into which the phalanstère is to be divided. The third group is equally important in guaranteeing diversity between the interests and occupations of the groups themselves. It is in Fourier's analysis of the nature of these two groups of passions that we find the characteristic features of his system. He comes back again and again to the two cardinal elements of his system, homogeneity of interests and tastes within the group, diversity of tastes and interests between groups.

The general line of Fourier's thought with respect to the affective passions is easily seen. The human affections, love, friendship, and so forth, are springs of action of great potentiality. Civilization, when it does not actually restrain the expression of these passions in one way or another, provides inadequate avenues for their expression. The natural order of society will bring together, by an elaborate system of grouping, those of like interests and tastes, and make possible the cultivation of the affections. The possibility of giving expression to the affective passions through the association of like with like is an important means of realizing one of Fourier's primary aims, the attractiveness of labor.

The two other necessary conditions, which are fulfilled by an organization which will permit of an expression of the distributive passions, are (1) a division of labor minute enough to permit a worker to perform only that work which he is passionately desirous of performing; and (2) the providing of the possibility of a fairly frequent variation in employment; in Fourier's own words, an "organization by series," working in

short "séances." "Work in series charms the senses because each group works on a thing which it has chosen with passion."⁶

Consider the cultivation of apples, a function prosaic enough under present conditions. In the ideal state a man cultivates only that brand of apples in which he is most interested, and if he has no interest in apples, he works on something else. "He who is fond of green pippins refuses to work on trees bearing the yellow, and will have nothing to do with other apple trees."⁷ Furthermore, in his work he is associating only with friends of the green pippin. Even so, under ordinary conditions, continuous work among green pippins might become monotonous. But this, in the natural order, is impossible, for work of a given kind is carried on for not more than one and a half or two hours at a time, at the end of which a complete change of occupation is permissible.

This serial organization of labor with rapid variation of employment is a natural deduction from those human passions which Fourier has called distributive. Let us observe the passion for intrigue (*la passion cabaliste*). In civilization this passion is the source of little else than disorder. It is otherwise in a natural society. Why has God, demands Fourier, caused men and, still more, women to be lovers of intrigue? "Because in a societal order, every man, woman, and child must be a member of 30, 40, or 50 passional groups; must espouse warmly the party emotions, the cabals, and intrigues of the series."⁸ The group organization of society not only follows naturally as a deduction from human nature — it is the ideal order for the expression of those passions which make up human nature. "A general perfection of industry will be born, then, of that passion most condemned by the philosophers, — the cabalist

6. iii, 408.

7. iii, 408.

8. iii, 404.

or intriguing passion, — which has with us never attained the dignity of a passion, altho so deeply rooted in the philosophers themselves, who are the worst intriguers imaginable.”⁹

Let us consider also the passion for variety, called by Fourier *la papillonne*, or butterfly passion. Undoubtedly in our present industrial society, with its demands for prolonged and steady application, this penchant is productive of both poor work and unhappiness. If it were natural for work to be prolonged for 12 to 15 hours at a stretch, as it is today, God would certainly have given us a passion for monotony. That such is not a characteristic of human nature is but further evidence of the lack of reason in our present organization. “The human reason must endeavor to discover a social régime in affinity with the passions.”¹ And it is but a reasonable deduction from this passion for variety, that work should proceed in short and varied series.²

9. iii, 405. The strength of this passion in women indicates their usefulness and importance in the new order.

1. iii, 411.

2. How life would be lived in a society in affinity with the passions can be seen by a glance at a typical day's program of a rich man living in the phalanstère. This program is arranged in Fourier's manner. (See i, 148.)

A rich man's day in the summer season

(Sleep from 11 P.M. to 3.30 A.M.)

- | | |
|---|--|
| (1) To 4.00 A.M. Public arising (<i>Cour du lever public</i>) | (16) To 9.30 P.M. Cultivation of fine arts. Concert, balls, plays, receptions. |
| (2) To 5.00 “ First breakfast followed by industrial parade. | (15) To 9.00 “ Supper. |
| (3) To 5.30 “ Hunting groups. | (14) To 8.00 “ Exchange negotiations — Preparation of future séances. |
| (4) To 7.00 “ Group of rose cultivators. | (13) To 6.30 “ Caring for merino sheep. |
| (5) To 8.00 “ Breakfast—newspapers. | (12) To 6.00 “ Fourth meal |
| (6) To 9.00 “ Under tent cultivation fruit walls or vegetables. | (11) To 5.00 “ Work at fish pond. |
| (7) To 10.30 “ Group of pigeon fanciers. | (10) To 4.00 “ Group of exotic plant cultivators. |
| (8) To 11.30 “ Library. | (9) To 2.30 “ Greenhouse group. |

1.00 P.M. Dinner (*Séance pivotale*)

(The typical laborer's day is a little less varied — there being only twelve séances.)

The third of the principal distributive passions, the composite, called by Fourier the most beautiful of all,³ is the desire for a blending, in all activities, of the pleasures of the senses and the spirit. It enters into the plan of all the institutions of the ideal order, but none of these institutions or relationships springs from it alone. It is unnecessary to consider here the manifold applications of this composite passion.

This in rough outline is the framework of Fourier's natural order. It may be described as a system devised to give expression to the passions through an organization of life into groups of those having similar interests, to a number corresponding with the number of kinds of interest, which groups are continually forming and dissolving in response to the variability of the human passions. From what has been said it may be inferred that this system is actually an *a priori* deduction from Fourier's peculiar conception of human nature. Moreover, it would appear that this conception of human nature bears little relation to the uniformities of human conduct observable in society. This is true, even though Fourier did find a few existing institutions, for example, certain coöperative ventures in dairy farming, which seemed to him to offer experiential verification of his theories; just as Kropotkin finds some existing institutions compatible with the principles of his anarchism.

This outline of Fourier's system should make it clear how, in common with other anarchists, he could start with his eighteenth-century predecessors, from the general premise of a natural order which aimed to be at the same time a statement of laws of persistent association of phenomena and a statement of canons of conduct of an ideal order, and arrive at an order of society whose structure was so radically different from theirs. The

explanation, as I see it, has been stated above. Fourier appears to offer a very good example of the characteristics of anarchist thought there discussed.

Altho both the economists and the anarchists, including Fourier, fell into the error of accepting a conception of the natural order opposed to the customary, existing order, the antithesis was much more sharply drawn by the anarchists than by the economists. Altho both Fourier and the economists accepted the conception of a natural order which could be deduced *a priori* from a knowledge of human nature, this common premise, human nature, was an idea so abstract that, in giving it content, their respective lines of thought sharply diverge. Altho both groups accepted a conception of a natural order which was at once a scientific hypothesis and an ideal order, the preoccupation of the economists with the descriptive and analytical, and the preoccupation of Fourier and the anarchists with the ethical and evaluative, led, in the case of the former, to a final identification of the natural and the existing; in the case of the latter, to the perception of wide differences between the existing and the natural. In all these respects Fourier's thought was typically anarchist.

IV

There can be no hope, in a paper of this size, of doing justice to Fourier. There is no reason, however, for letting this impossibility stifle a modest attempt, in conclusion, at interpretation and criticism.

The whole tenor of Fourier's thought is anarchistic. It is only by a vulgar interpretation of anarchism, that is, as meaning the advocacy of revolution by force and the destruction of all organization, that one can refuse to include him among the anarchists. The essential characteristics of anarchism, the accentuation of in-

dividual differences, the absence of authoritarian control, an organization of society based entirely upon individual agreement, are all to be found in Fourier. As one of the distinctly original radical thinkers of the nineteenth century, one of those instrumental in giving direction to main currents of radical thought, it is difficult to connect him closely with contemporary social reformers. Altho frequently associated by commentators with Robert Owen, he was in essentials, as has been seen (page 251, note) very far removed from this English socialist. He was at one with his contemporary, St. Simon, only in his admiration for the method of the natural sciences, and in his optimism over the potential results of its application in the field of social studies.

Even among anarchists he stands alone in the extent to which he carries his conception of a possible harmony among conflicting interests. Economists conceive a world whose primary fact, the scarcity of desirable goods and services, necessitates conflict and competition throughout its complete compass. For the consumer, there is the necessity of choosing between conflicting, alternative commodities, of balancing utility against difficulty of attainment; for the producer, the choice between alternative and competing factors of production and methods of production; for every unit in the whole complicated economic mechanism, the continual necessity of choosing and, consequently, of going without. The system of Fourier involves no conflict or competition, no restraint of this desire in order to secure that. Its productive resources are distributed without regard to economic incentive, as the term is generally understood. Its commodities are produced and consumed in the correct amounts and at the proper time, without the necessity of pecuniary or other economic checks and balances. It is possible, by means of the

reason, to discover an order which, by liberating the passions, will distribute human energy in exactly the right proportions between the various kinds of work to be done, and will, at the same time, make this work attractive. This order, for the same reasons, will ensure the consumption of exactly those commodities which have been produced.

Fourier would seem to depart from the theory of passionate attraction in his remarks on the familiar economic problem of the distribution of income. He contemplates an allocation of $\frac{4}{12}$ of the community's revenue to capital, $\frac{3}{12}$ to talent (organizing ability), and $\frac{5}{12}$ to labor. Apparently this is an appeal to economic incentive to guarantee the correct apportionment of the productive factors, but in appearance only. In reality, this is the distribution which happens to come about because of the nature of the human passions and the uses to which they will be put in the harmonious order.⁴

This order not only secures an harmonious equilibrium in society between particular groups and interests which, in another society, would be conflicting; it also secures, through a complete expression of the passions, an equilibrium between otherwise conflicting interests within the human breast. Fourier, in common with other social philosophers, conspicuously Plato, envisaged society and the individual as parts of the same problem. Two problems, he says,⁵ face civilization and call for solution. "One turns on the art of adjust-

4. Probably there were also, however, certain reasons of expediency which determined this distribution. The high returns promised capital and business ability are partly to be explained as an advertising device. Fourier was anxious to get capital for the construction of a model phalanstère, and was interested also in obtaining the services of able men. He promised ridiculously high interest yields -- 30 to 40 per cent -- on capital invested, and was in the habit of returning home every day at noon, to interview those capitalists who might have been attracted by his prospectus. Needless to say, none ever came.

5. i, 125.

ing the practice of virtue with the strength of the passions and with nature, with the love of wealth; the other, on the means of penetrating the great mystery, the system of nature and the harmony of the universe." The solution of one of them is the solution of both.

It differs curiously from the Platonic solution of both problems. Instead of the individual reason governing over and arbitrating between conflicting interests and passions in the man, restraining and repressing, adjusting and balancing, and, in the state, a body of reasonable men securing an harmonious equilibrium by a balancing and restraint of the interests of conflicting parties, we have an abdication of the reason. It is an equilibrium attained through expression of the passions rather than through repression and restraint of them. Once reason has found the key to the mechanism, there is nothing for it to do but efface itself. The first guarantee of the system of attraction to man is "the compass of permanent social revelation, in that the needle of attraction stimulates us continually through its impulses, as invariable in all times and places as the light of reason is variable and deceitful."⁶

Fourier was a thoro-going romanticist. His accentuation of individual peculiarities and differences, his adulation of the primeval savage and a preëxisting terrestrial paradise, his view of the perfectibility of man and society, his detestation of proportion and restraint,⁷ his dismissal of the reason in favor of the "natural" impulses of man, his refusal to admit the beneficent possibilities of adversity, all are romantic characteristics. Fourier represents Rousseauism grown rank and luxurious.

6. ii, 240.

7. i, 405. "A passional series does not suffer moderate sectaries, it has a horror of moderation."

And in all his romanticism he is peculiarly modern. Gide⁸ has commented on Fourier's remarkable foresight — the resemblance of many of his plans and predictions with what has come to pass. He speaks of technological resemblances, for example, the similarity of Fourier's phalanstère to modern coöperative apartments; of his devices for centralized housekeeping and cooking, his forecasts of rapid transportation, and the like. But there is another and more important sense — the psychological — in which Fourier is modern. I have referred to it above as consisting in his emphasis on self-expression. It appears in his ideas on education, and takes the form of the adaptation of the subject-matter to the interests of the learner rather than the adaptation of these interests to the subject-matter. It appears in his ideas on the relation between the sexes. A good deal of modern so-called personnel work, vocational guidance, and the like, pursues the ends formulated by Fourier. Indeed, one can compare Fourier to a highly ingenious, if somewhat insane, personnel manager, devising a system of society adapted to the nature of the human material which God has seen fit to place at his disposal.

All this insistence on self-expression assumes that man has something to express. In Fourier's opinion this something is a great deal. Man by nature, untouched by society, springs from his mother's womb endowed with a complete set of interests, desires, and passions. There is no need of a patient cultivation of interests, no need of tempering and refining desire and passion through restraint and adversity, no need, or, for that matter, possibility, of a development of the higher capacities of the human spirit. It is these interests and desires which, already existing, must determine

8. In his introduction to *Les Oeuvres Choiesies*.

the nature of education and of society. The obvious objections which may be made to Fourier's insistence on self-expression have also their application to the modern over-accentuation of the need and possibilities of self-expression.

The industrial revolution passed Fourier by; he failed completely to appreciate its significance. One of the primary aims of Fourier's system was an expansion of the output of economic goods. Next to health, wealth contributes most to man's happiness.⁹ But his plans for the expansion of output called only for the elimination of waste in the use of existing technological equipment. He was an economist in that older sense of the word, meaning economizer. He advertised the economies of the division of labor with the enthusiasm of Adam Smith; but division of labor meant to him the simple form well illustrated in market-gardening, not the complex form associated with the machine technique. His phalanstère was based squarely on an agricultural régime and hand labor. In these respects he is exactly the opposite of his contemporary, Owen, who did understand the significance of the Industrial Revolution, and who attempted to include the advantages of the new industrial methods in his community schemes.

Despite, however, Fourier's manifest weaknesses, the fantastical nature of his proposals, the purely sensual character of his ideal order, his lack of understanding of the economic society in which he lived, there is the touch of genius in his work. His central idea of passionate attraction, tho grotesquely overstated, provides a very profitable working vein for those engaged in extracting the secret of successful methods of human combination and coöperation. It implies psychological differentiation and analysis added to organization, and

9. ii, 232.

these were the things for which Fourier stood. He was interested in demonstrating also that organization does not necessarily involve an expansion of authoritarian control. Complexity of organization, and an effectiveness in the application of human energy, are compatible with an extensive sphere of individual autonomy. Individual freedom combined with an effective application of human energy — that is but another statement of Fourier's problem.

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THE CURRENCY SYSTEM OF THE IRISH FREE STATE

SUMMARY

The Coinage Act, 1926 and the Currency Act, 1927 dissolve the currency union of Great Britain and the Irish Free State, 264. — The Free State pound, its new unit of value, made equal in weight and fineness to the pound sterling, 266. — A Currency Commission, created for the management of the currency, 267. — The circulating media are to be: (1) A token coinage preserving the British denominations, 264; (2) Consolidated bank-notes, with a maximum issue of (£6,000,000 for the present) 268; (3) Legal tender notes, to be issued by the Commission to purchasers who tender an equal nominal amount of British currency or London funds, 272. — The system is that of a gold exchange standard, with no alteration in control of banking and credit, 275.

UNTIL December 6, 1922, Great Britain and Ireland formed a single monetary unit, employing the same standard and the same legal tender. Prior to the war, the circulating medium in Ireland comprised four constituents: gold, Bank of England notes, Irish bank notes, and the subsidiary silver and bronze coinage. Bank of England notes were scarce, and were not legal tender in Ireland, a property possessed by gold alone. On the outbreak of war gold was withdrawn from circulation and the vaults of the banks, to be replaced by Treasury notes and Treasury note certificates; Treasury notes were legal tender. With the progress of British inflation, the number of Treasury notes outstanding probably increased, but it was never very large, for the Irish banks of issue preferred to hold the Treasury notes which came into their hands and issue their own notes against them, a tendency assisted by the bestowal of legal-tender quality on these latter by statute, 1914-19.

The commonest medium of payment was the Irish bank note, the issue of which was regulated by the Bank Charter (Ireland) Act, 1845, on the same lines as that of Bank of England notes: a rigidly limited fiduciary issue, with complete backing in gold (or, after 1914, Treasury notes or Treasury note certificates), or in securities deposited with the Treasury for all "excess issue" over this amount.

The creation of the Irish Free State on December 6, 1922, as a separate fiscal and political entity, raised a number of problems: the desire of a new state to signify its monetary independence by currency of its own; the accrual of certain profits to the British government on account of the existing circulation in the Free State (the loan without interest made by the use of its Treasury notes, the interest on securities deposited by the banks as cover for their excess issue, and the seigniorage arising from the flotation of token coinage); the absence of any legal tender in the Free State, since it held no gold and only those Treasury notes issued before December 6, 1922 (which were not identifiable as such) were held to come within the terms of the Adaptation of Enactments Act; the dependence of the circulating medium of the Free State on British monetary policy; the regularization of the status of the banks, especially those with the privilege of note-issue, which operated under both jurisdictions; and the consideration of the Bank Charter Act with a view to its possible revision.

The simpler matter of the token coinage was dealt with first. A coinage act was passed in 1926, providing for the issue of an independent token coinage, preserving the British denominations and their relation to the pound sterling. A fineness of 750 for the silver coins has been approved on grounds of appearance and durability, instead of the British standard of 925 before

1920 and 500 after that date. Nickel has been substituted for silver in the sixpenny and threepenny pieces; arrangements for minting have been made with the British mint. The decision to mint these coins provoked some criticism on the ground of inconvenience to travelers between the Free State and Great Britain or Northern Ireland, and the word "depreciation" was lightly used. Greater displeasure — in some quarters — has been caused by the rigid exclusion from the designs of all traditional and mythological subjects.

The amount of subsidiary coinage in the banks and the hands of the public has been estimated at £1,436,000 for the beginning of 1924, and probably half-a-million less at the present time; on that circulation the Minister for Finance expects a profit of £300,000 (1927 Budget speech). But the realization of that profit depends entirely on getting the present British coinage out of the territory of the Free State and its replacement by the new coinage. In the case of the Union of South Africa in 1920, the British Treasury had agreed to take over the whole outstanding issue, over a period of five years, at its full nominal value. Up to the present no steps appear to have been taken to secure a similar arrangement for Ireland. The Treasury is less likely to be complaisant now than in 1920. In that year the demand for currency was at its peak in England, and the coins 925 fine taken over would be reissued as coins 500 fine; in 1927 the conditions are rather the reverse. In default of agreement the Bank of England is always ready to accept pre-1920 silver at its full nominal value (and there is probably still a large proportion of such silver afloat). Post-1920 silver, sorted and excluding the threepenny pieces, is accepted at a charge of seven shillings and sixpence per £100, the consigner paying insurance and freight. The adoption of this alternative might consid-

erably reduce the amount of the expected seigniorage profit and delay its realization.

To deal with the questions concerning standard money, a Banking Commission was appointed on March 8, 1926, consisting of Professor H. Parker Willis of Columbia University as Chairman, and seven other members, five of whom were, or had been, directors of Irish banks. The terms of reference of the Commission were sufficiently general: "to consider and report what changes, if any, in the law relative to banking and note issue are necessary or desirable, regard being had to the altered circumstances arising from the establishment of the Irish Free State." In the field of currency two principal matters arose for immediate consideration: provision of legal tender and regulation of bank-note issues. The first interim report dealing with these is dated April 16, 1926. The Currency Act, 1927, embodies its recommendations in the main.

On the fundamental question of monetary standard and unit there were three alternatives:

1. Retention of the British standard and unit, and the granting of legal-tender quality in the Free State to British legal tender. This course would have preserved for the British at the expense of the Irish government the profit accruing from that circulation, and would have effectually bound up the Irish currency with British monetary policy.

2. Complete breach with the British system, and creation of a new currency unit, presumably on the gold or gold-exchange standard. This course would have involved some degree of complication in our financial relations with a neighbor who takes 95 per cent of our trade, raised the bogey of a rate of exchange, and, if on the gold standard, entailed the unnecessary expense of securing a gold reserve; it would have seemed, tho it

would not in fact have been, less stable than the expedient ultimately adopted. This was,

3. Retention of the British standard unit, with the creation of a new legal-tender currency for the Free State, to be maintained at parity with sterling.

For the general control and management of the currency a Currency Commission is created, an independent non-political body corporate, the stockholders in which are the banks operating in the Free State and either registered there or maintaining a local shareholders' register therein. Each member subscribes £5000, of which £1000 is to be paid on application for admission and the rest on call. The directorate of the Commission consists of three members elected by the stockholders, three government nominees (two of whom shall be "representatives of business industry or trade" and the third may be a permanent official), and a chairman and managing director "learned and experienced in banking and finance," to be elected by the six. The several functions of the Commission will appear as we proceed. Mr. Joseph Brennan, formerly Secretary to the Department of Finance, has been elected as the first Chairman (September, 1927).

As regards the bank-note issue, the system of 1845 has been retained in principle but modified in details. By the 1845 Act fiduciary issues had been confined to six banks and limited to the following amounts:

Bank of Ireland.....	£3,738,428
Provincial Bank of Ireland.....	927,667
National Bank.....	852,269
Ulster Bank.....	311,079
Belfast Bank.....	281,611
Northern Bank.....	243,440
Total.....	£6,354,494

These figures represented the actual amounts outstand-

ing on a given date before the Act, and had no reference to the relative importance of the banks; several other banks were denied the privilege. The banks of issue were under the obligation (of which they were relieved during the war) of redeeming their notes in legal tender at any office or agency; the notes enjoyed a prior lien upon all the issuer's assets, and its unpaid capital subject to call (and in most cases the bank's liability was unlimited for note issue). All notes outstanding were taxed at the rate of 0.35 per cent. Each bank habitually carried an excess issue of varying dimensions. The total issues outstanding for a series of years were:

1910.....	£7,211,000	1919.....	£29,054,000
1911.....	7,058,000	1920.....	24,717,000
1912.....	7,228,000	1921.....	19,052,000
1913.....	8,374,000	1922.....	17,321,000
1914.....	11,038,000	1923.....	16,704,000
1915.....	15,000,000	1924.....	16,241,000
1916.....	19,112,000	1925.....	15,260,000
1917.....	22,326,000	1926.....	14,788,000
1918.....	30,896,000		

The chief value of the system to the banks of issue was the power of carrying large quantities of notes in their numerous branches as "till-money," such notes not being regarded as "issued" for the purpose of taxation, or constituting a liability of the bank, or requiring cover as excess issue. The amount has been estimated (by Senator Andrew Jameson, a director of the Bank of Ireland) at £6,000,000 in 1920, and £8,000,000 in 1922, and to have been drastically reduced — to £2,000,000 — by 1924, in consequence of the disturbances accompanying the revolution and the civil war.

The rearrangement now established covers five points:

1. Accepting, as observed, the principle of a rigid fiduciary issue, the determination of a suitable aggre-

gate figure for the Free State became necessary. Of the existing issue, £4,000,000 was regarded as applicable to the Irish Free State, on the basis of the apportionment of aggregate business between the two territories and the number of branches in each. Making allowance, in addition, for the provision of till money, which will not be available in the same manner as before, the sum of £6,000,000 has been accepted as the aggregate limit.

2. This total is divided among the banks, and all shareholding banks are admitted to the privilege of issue. As between these, "a basis of apportionment which is founded upon the relative amount of advances and deposits, and capital and reserves reported by each of the banks now operating in the Free State, modified by the number of branches established and maintained by the various banks" has been adopted. The result is:

Bank of Ireland	£1,705,000
National Bank	1,365,000
Munster and Leinster Bank	852,000
Provincial Bank of Ireland	649,000
Hibernian Bank	439,000
Ulster Bank	419,000
Royal Bank of Ireland	273,000
Northern Bank	243,000
National Land Bank	55,000

(In 1922, on the absorption of the Belfast Bank by the Midland Bank of London, all its branches in the Free State were taken over by the Royal Bank; the National Land Bank has since been acquired by the Bank of Ireland.) Provision is made for the revision of the allotment at the end of the first two years and every third year thereafter, and also in the event of alterations in the membership of the Commission; and for the reduction of the total issue should the circulation of legal tender fall below £4,000,000. But in no case can the aggregate amount be raised to exceed £6,000,000 without the consent of the Minister for Finance.

3. The notes will be a uniform issue of Consolidated Bank notes, bearing the name of some member bank. They will be issued by the Commission to members who apply for them, if satisfied that the applicant is in possession of an equal amount of claims against his customers for liquid sound advances obtained by the latter. Issuing banks are prohibited from paying out one another's notes and must forward them for redemption. This system prevents the holding of free till money. The former excess issues are abolished, being replaced by legal-tender notes. Outstanding issues will be taxed at the rate of $1\frac{1}{2}$ per cent.

4. The Consolidated Bank notes will be issued as obligations of the Currency Commission, the banks whose names they bear being primarily responsible for their redemption in legal tender, but only at the head offices. To meet its contingent responsibility the Commission has three resources:

(1) It shall receive from the applying banks security in either or both of the following forms: (a) satisfactory bills or evidence of indebtedness arising out of English or Irish trade, domestic or foreign, such bills to have the endorsement of the depositing bank; (b) due bills or contract obligations made by the bank itself in favor of the Commission and representing liquid sound advances on overdraft or otherwise; or, in cases where so desired, approved securities satisfactory to the Commission (to be taken merely as immediate protection to the notes, their issue still depending on proof of the existence of the liquid sound advances referred to).

(2) It shall receive from the applying banks claims upon their entire assets.

(3) Out of the earnings of the investments held by it a special note reserve shall be built up equal to 10 per

cent of the notes outstanding, this to be invested in British government securities or securities guaranteed by the British government. The liability of the Commission is limited by that of the bank whose name the notes bear; it is an agent for enforcing the bank's proper liability.

5. The Commission is authorized to permit, by unanimous vote, "extraordinary issues" on the part of any bank, in case of emergency, up to the amount of such bank's published reserves, subject to a tax of not less than 5 per cent and a maximum duration of 12 months.

During its passage this part of the Act was criticized from several points of view: the abolition of free till money; the more than ordinarily elaborate safeguards provided for note-holders; the unquestioning acceptance of the inelastic fiduciary issue of 1845 at a time when its adequacy for meeting seasonal and temporary variations in the demand for currency has been questioned; the attempt to combine centralized and individual responsibility for the bank-note issue, while at the same time widening the basis of that issue, in opposition to the modern practice of frankly centralizing it. But such characteristics arise naturally from the composition of the Banking Commission, and, even if flaws from the point of view of pure monetary theory, are not likely to lead to unsoundness.

The Currency Act, being an enactment of the Parliament of the Irish Free State, cannot repeal the Bank Charter Act, an enactment of the Parliament of the United Kingdom; it can only exclude the territory of the former from its area of operation. Consequently, as the law at present stands, the six banks of issue under the earlier act are at liberty to float the whole of the issue therein permitted them in Northern Ireland, if they can. It is understood that the British government

intends to rectify this situation, but its proposals have not yet become public. So long as the present situation lasts, the Currency Commission is enabled by unanimous vote to restrict the issue of consolidated bank notes by any of these banks if, in its opinion, the sum of consolidated bank notes allowed to such bank by the Act and its own notes issued in Northern Ireland forms too great a proportion of its liquid sound advances.

The Act prescribes as the unit of value the Free State pound, identical in weight and fineness with the pound sterling. It makes provision for the coinage of gold, but there is no immediate intention of using the power taken. The ordinary circulation will consist of legal-tender notes. These will be issued by the Currency Commission to any person who offers in payment an equal nominal amount of gold (which the Commission is not bound to accept until the coinage of gold is undertaken) or British legal tender, and to any member bank on offer of a bank draft payable at sight in London or British government securities (at current market prices).

The funds so received shall be held in any one or combination of the following forms at the Commission's discretion: (a) gold; (b) British legal tender; (c) British government securities maturing within 12 months; (d) current sterling balances at its London agency or with British banks.

The restriction of the range of investment to the short-term maturities, less profitable and more expensive but more liquid, had been rejected by the Banking Commission and did not appear in the bill as originally drawn: it was inserted as an amendment by the Senate and accepted by the government in order to hasten the passage of the bill in the disturbed political conditions of August, 1927. Without doubt it will be amended in

the future: the marshalling of its assets is a matter in which wide limits may be set upon the Commission's discretion. The fund and its growing produce will be held in trust by the Commission for the Government of the Irish Free State.

Parity with sterling will be maintained by the obligation laid upon the Commission of redeeming the notes in sterling upon demand at its London agency. It is not obliged to convert in Ireland. In addition, the notes will constitute an unlimited liability of the Government of the Irish Free State, and as such will bear the signature of a high official of the Department of Finance. The original report recommended that the Currency Commission should have power to stop or restrict the issue of legal tenders when the total outstanding should amount to a figure equal to the sum of the present secured or excess issue of bank notes and British currency notes in circulation in the Free State. The want of lucidity in this part of the report and the repeatedly expressed fear of inflation permit the suggestion that this proposal arises from a misapplication of the recommendations of the Cunliffe Committee with regard to the British currency note issue, to which the system of legal tenders created by the Act bears no resemblance except in name. The power might possibly have been used by the Commission as an indirect means of controlling credit, — tho only in rather abnormal circumstances, — but it has been omitted from the Act. The report assumes as the probable circulation of legal tenders in the initial period a figure of £6,000,000.

The income at the disposal of the Currency Commission will comprise at first: (a) the tax upon the consolidated bank notes, say £90,000 per annum; (b) the interest on the British securities held as backing to the legal-tender notes — a possible £180,000 to £240,000

per annum; and ultimately also (c) the interest on the bank-note reserve fund, say £18,000 to £24,000 per annum, so long as the maximum limit of consolidated bank notes remains unaltered.

This income will have to be applied to the following purposes: (a) cost of printing the legal-tender notes; that of printing the consolidated bank notes will be borne by the responsible banks; (b) administration of the Commission and its redemption agency, and the managing of its investments, which will be mostly short-dated; (c) building up the bank-note reserve fund of £600,000 (in the initial period); (d) repairing deficiencies in the legal-tender note fund; (e) payment of dividends to shareholders at a rate not exceeding 6 per cent; (f) the surplus shall be paid into the Exchequer at periods and in a manner to be determined by the Minister.

For the purpose of meeting its charges, the Commission is empowered to borrow up to the amount of its paid-up capital. In respect of current balances in its hands, it is permitted to exercise all the functions of a banker. This provision enables it, with the acquiescence of the Minister, to form the nucleus of a central bank.

Some miscellaneous provisions may be noted. The Commission's accounts shall be audited by the Comptroller and Auditor General. The Commission shall present an annual report to the Minister, who shall present it to the Chamber of Deputies; it shall also furnish information for periodical returns in the *Gazette*. It may require any banker in the Free State to furnish such information and afford such access to his books as it considers necessary to the due discharge of its duties. It may make regulations for the shareholding banks with reference to their currency operations, and the Minister, with the unanimous concurrence of the Com-

mission, may prescribe the form and period of the balance-sheets of the shareholding banks. And, finally, the Commission is relieved from income tax, stamp duty on transfers of stock and funds of the government or parliament of the United Kingdom, and stamp duty on contract notes issued to it.

The system as it stands is a gold-exchange standard, wherein the Currency Commission has the duties and responsibilities, without the powers, of a central bank.

So long as the United Kingdom was a single fiscal unit, the Irish banks were members of the banking system centralized under the Bank of England, following its discount policy automatically. The Irish bank rate stood one per cent above the official rate of the Bank of England for discounts and advances, and one half of one per cent below the current English rate for deposits. This was frequently made the subject of complaint, on the two plausible but fallacious grounds that the Irish rates were needlessly unfavorable to customers, and that the credit needs of a country predominantly agricultural were not best met by a policy calculated to serve the ends of one predominantly industrial. The fallacy in the first is that the published rates do not tell the whole story; in the second, that it fails to distinguish between long-term credit and the commercial credit which is chiefly subject to the influence of bank rate.

The question is now raised in a new form by the creation of a separate currency; for an important factor in the continued feasibility of the maintenance of parity with sterling without undue depletion of sterling reserves will be the relative price levels of Great Britain and the Irish Free State. It scarcely follows, as seems to have been tacitly assumed, that the use of a common

unit of account will be accompanied by a continuous identity of price-levels. Indeed, in view of the widely different composition of the volume of goods that enter into the trade of the two countries, the reverse is rather to be expected. A higher level in the Free State, with its stimulation of imports, would lead to an adverse balance of payments and of trade such as possibly exists at the present moment (it has been estimated by the Department of Industry and Commerce at £6,000,000, but allowance must be made for the gross imperfection of the figures used). The normal sequence of a drain upon the central bank's reserve, followed by its steps to protect its holdings by restricting credit, will be impossible where the control of credit is vested, not in the Commission whose reserve will be suffering depletion, but in eight competitive banks. The situation could well arise of a continued drain upon the Commission's holdings of sterling, which it would be powerless to stop. It is true that the individual banks would ultimately be compelled by their need of currency to purchase legal-tender notes, and thereby both to restrict their granting of credit and to augment the Commission's reserves, subject always to the elasticity of their own reserve ratios. But this readjustment will be less smooth and less rapid than when induced by a single control, and the range of movement of credit and price-levels and the Commission's reserve will be wider than under the centralized system; expansions and contractions will be allowed to go further before the normal reactions come into operation.

The question of central control was raised by the Banking Commission. It states in its report: "Almost at the outset of its deliberations the Commission was brought face-to-face with the question whether to recommend the establishment of a so-called 'Central Bank' for

the purpose primarily of directing the note-issue." It summarily dismisses the proposition, drawing attention to the following points. (1) The Free State has to-day an unquestionably sound and satisfactory banking system. No one questions the solidity of its banks or their ability to meet the demands of their customers. (2) Government business is being on the whole satisfactorily dealt with from the banking standpoint. (3) Banks are able to obtain, either through their own offices in London or through correspondent banks there, such access to a great money market as they may need from time to time. (4) There is no independent discount market in Ireland and in fact apparently little market for bills of exchange outside the banks. All of which points are irrelevant, and, if accepted, would have prevented the creation of the majority of the post-war central or reserve banks. Moreover, the first is open to question on one or two points, for example, the financing of the land ramp in 1919-1920, and the short-sighted branch extension of the boom years.

The Act as a whole is characterized by a conservatism which is natural in view of the composition of the Banking Commission and not undesirable in view of the tenderness of Irish public opinion on the subject of money. Some of the Commission's arguments seem wanting in relevance and lucidity, but they have at any rate provided a system which, if subject to a probable accentuation of credit fluctuations, is amply protected against fundamental unsoundness or instability.

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THE GERMAN UNEMPLOYMENT INSURANCE ACT OF 1927¹

SUMMARY

Ordinance of November, 1918, for relief of unemployment, 279. — Left in force in essentials till the passage of the Act of 1927, 280. — Development of employment service up to 1925, 281. — The new act; its administrative provisions, 283. — Federal Department established, 284. — Self-government in the lower organs, 286. — What persons are insured, 288. — What constitutes right to relief, 291. — Relief in case of industrial conflict? 293. — Duration of ordinary relief, 295. — Emergency relief, 297. — Amount of relief provided, 297. — Funds for ordinary relief raised in equal amounts from employers and employees; for emergency relief from public, 304. — Financial estimates, 305.

THE law on employment service and unemployment insurance, which went into effect on October 1, 1927, marks the end of a development extending over many years. In the great system of social insurance which Germany began in the eighties of the last century, an essential part has previously been lacking. In cases of unemployment caused by sickness, accident, invalidity, and old age, the German workman was indeed provided for on the basis of a legal claim against the insurance funds. But a legal claim for periods of unemployment caused by economic fluctuation was not yet included. The liberal social theory of the pre-war period was not disposed to relieve the individual who was able to work

1. In the present paper the author has described the outstanding features, but has not been able to cover all the points, especially in the administrative provisions, that deserve attention. The full text of the act will be printed shortly in English, French, and German, in the Legislative Series of the International Labour Office (Geneva).

The translation from the German manuscript has been made by Mr. Talcott Parsons.

of the responsibility of securing his own living. Only when there was danger of complete destitution, did the communal poor relief, whose assistance involved loss of the franchise, intervene. The first systematic aid in time of unemployment was initiated by the trade unions, which paid benefits to their members. Only in a very few cases were additional contributions to the trade-union benefits made by the local authorities, or were independent unemployment funds established.

At the outbreak of the war, the sudden increase of unemployment on a large scale made the provision of public funds a necessity. When, after the end of the war, the floods of soldiers came back, a quick provision for these people, who for the time being could not be absorbed into industry, as well as for all the others who were thrown out of work by the transition to peace-time conditions, proved indispensable. Hence, the issuance of an ordinance dealing with relief of unemployment, on November 13, 1918, — four days after the outbreak of the revolution, — was the first measure of the new government.² The ordinance was intended as a temporary measure and was to go out of effect not later than the end of one year. The difficult economic conditions of the post-war period, the disturbances of the labor market through reparations, the Ruhr conflict, inflation, stabilization, and the reëntury into competition in world markets, have delayed the final settlement for nine years. Altho the ordinance of 1918 showed many traces of over-hasty drafting, and had to be amended no less than seventeen times and reënacted four times, it remained, in its essential features, in force until the introduction of the unemployment insurance scheme.

2. See the writer's monograph, *Die Bekämpfung der Arbeitslosigkeit in Deutschland seit Beendigung des Krieges*. Schriften der Gesellschaft für Soziale Reform, Heft 75, Jena, 1925.

The fundamental principle of the ordinance, the obligation of the localities to establish relief for unemployed individuals willing and able to work, remained standing. The provisions concerning the amount and the duration of the benefits, on the other hand, were repeatedly changed. The numerous changes of the ordinance that gradually worked out the main features of the insurance scheme which was later introduced, had at the same time made the old system of unemployment benefits into a mass of compromises, the abolition of which was strongly desired on all sides. The financial reorganization which took place at the time of the stabilization had introduced, for example, essential elements of an unemployment insurance into the benefit system, while yet in general the benefit principle (*Erwerbslosenfürsorge*) was maintained.³ The obligation of those concerned to contribute was an approach to insurance; but a direct relation between the payment of contributions and the claim to support did not exist. The principle of benefit remained decisive, that is, support rested on the proof of need. It could be granted only in so far as the income of all the members of a family living together in one household was not sufficient for the necessities of life. That the claims of workers who had paid contributions for years had to be rejected, and that the investigation of need was felt to be humiliating and unjust, were sufficient reasons for the trade unions to demand energetically a final settlement of the unemployment insurance question.

The attempts of the federal government to draw up a plan of unemployment insurance satisfactory to the public remained, however, unsuccessful for years. Only

3. In the main, the cost was met from public funds, not from contributions of the interested parties. (Translator's note.)

the third proposal,⁴ introduced in October, 1925, was adopted, after consideration lasting nearly two years, by the legislative bodies in the Reichstag on July 15, 1927.

The Reichstag, to which this proposal came in 1926, subjected the law, in the course of a five months' discussion, to fundamental alterations, and in particular changed the proposed administrative structure completely. Out of the proposal for unemployment insurance developed a law dealing with both employment service and unemployment insurance. The difficulty of bringing the insurance into the necessary close connection with the existing system of employment bureaus led to the reorganization of the latter and to the incorporation of both into a single system. How strong, in spite of the many dissenting opinions in matters of detail, was the fundamental agreement of all sections of the German peoples with this measure of social legislation, is shown by the large majority (356 out of 419 votes) with which it was approved by the Reichstag.

Since the reorganization of the system of employment bureaus was associated with the introduction of unemployment insurance, it is well to begin with a brief sketch of the development of the employment services up to 1925.

Even during the war, there had been agitation for public, jointly administered employment exchanges, to remedy the lack of coördination in the existing employment service. In some communities they already existed, but often without influence compared with the private enterprises, the employers' and employees' asso-

4. Regierungsentwurf eines Gesetzes über Arbeitslosenversicherung nebst amtlicher Begründung, I Teil. Regierungsentwurf in der Fassung der Vorlage an den Vorläufigen Reichswirtschaftsrat und den Reichsrat, herausgegeben von der Reichsarbeitsverwaltung, 34. Sonderheft zum Reichsarbeitsblatt, Berlin, 1925.

ciations, and the charitable organizations. Following several decisive advances after the close of the war, legislative regulation was imposed in 1922, on the basis of which Germany was covered with a net of public employment bureaus, most of them to be established by the local authorities. These employment bureaus were linked together through the state labor offices, which were established for the various states (in Prussia for the provinces), and which were charged with the duty of adjusting the supply and demand for labor between localities. The supervision over the personnel of the bureaus fell to the state governments, while the very much less effective supervision of their substantive work was entrusted to the state labor offices. The head of the technical organization was the Federal Office for Employment Service, which supervised the whole labor market. In all jurisdictions employers and employees were brought into responsible coöperation in joint committees. Along with the employment service, the public bureaus aided in the administration of the unemployment benefits. The suggestion, made especially in socialist circles, to give the public bureaus a monopoly of the employment service, had not been followed. Alongside of them remained in operation, especially, the employment service bureaus of the trade unions.

In the difficult years which followed this legislative regulation, the system of public employment bureaus developed continually and, on the whole, satisfactorily. But many complaints were heard. Side by side with localities where the employment bureaus worked excellently, there were others which showed too little understanding of the system. Too rigid an application of the law had led to an excess of small bureaus, ineffective and sometimes competing with each other. Local particularism stood in the way of a reasonable

demarcation of districts. The government body which supervised the legal administration was not expert enough, and the state offices did not carry out their supervision in technical trade matters satisfactorily. The trade unions found the influence of the economic representatives too small, that of the bureaucratic authorities too great. All these complaints were brought forward with great insistence when the proposal for an unemployment insurance scheme turned over important functions to the public employment bureaus and thereby removed them from the authority of the self-governing private bodies representing economic interests.

The two most difficult questions which the unemployment insurance had to solve were those of administrative organization and of the amount of support to be given. The questions of the scope of the system, and of the means of raising funds, were also hotly debated.

The administrative organization was framed to fulfill three requirements. In the first place, it was to create a clear and easily understood organization of authority (*Instanzenzug*), which would guarantee the execution of the provisions of the law without friction and would be free from political and bureaucratic pressure. In the second place, as in the other branches of German social insurance, it was necessary to give responsibility and self-government to those who would bear the burden. And thirdly, under no conditions could insurance be allowed to lose its connection with employment, in order that the goal, the finding of employment, might not be lost sight of; and there must be effective means of making sure that the worker was willing to work at the time when he was out of employment. These requirements were to a certain extent mutually contradictory, for since the localities had organized the employment bureaus, the close connection with them would tend to endanger

both the independence of the insurance bearers and the unity of the whole structure. The government proposals suggested the formation of contributory and risk-bearing groups according to districts, but the trade unions did not consider their self-determination sufficiently provided for by such an arrangement. The difficulty of fulfilling the legitimate claims of the interested parties within the framework of the administrative structure caused the demand for complete self-determination of the economic groups of employers and employees to come increasingly to the fore.

Wishes of this sort led the Reichstag, in March, 1927, to secure from the Federal Ministry of Labor the submission of a supplementary proposal, which placed the administrative organization on an entirely new basis. It removed the responsibility for the employment bureaus from the local authorities; and it shifted the responsibility for unemployment insurance away from the intermediate authorities, putting it, along with that for the employment service, in the hands of the highest. Thus the conflict for self-determination between economic and political bodies was decidedly in favor of the former. However, it proved necessary to enlist in the organization the local authorities, which still carried a large part of the functions pertaining to control of the labor market (for instance, the provision of public works to relieve unemployment); and thus was built up a peculiar structure, such as is not to be found in any other branch of German social insurance.

The administrative agency of the unemployment insurance, employment service, and vocational guidance is the Federal Department ⁵ for Employment Service and

5. *Reichsanstalt für Arbeitsvermittlung und Arbeitslosenversicherung*. The term *Anstalt*, translated as "Department," refers, not to a central authority, but to the whole administrative organization of the scheme. — (Translator's note).

Unemployment Insurance, whose headquarters are in Berlin. It is a public body which, with the approval of the Federal Minister of Labor, may take over still other functions connected with the regulation of the labor market. It is divided into a central bureau, the state labor offices, and the (local) labor offices. In all three branches self-determining bodies are formed (in the central bureau an administrative council, in the others administrative committees), which are composed in equal numbers of representatives of the employers, of the employees, and of the public bodies such as the communes, provinces, and states (advisory members, *Beisitzer*). Besides the administrative council, the highest organ of the Federal Department, there is a second, the executive, which is composed of the president of the Federal Department, or his representative, as chairman, with five representatives each of employers and employees. In all decisions of these organs and their committees, the representation of employers, employees, and public bodies must be equal. In so far as the organs of the Federal Department act within the field of unemployment insurance, the representatives of the public bodies do not take part. In all organs women are to be represented. In all,—local, state, and national,—trade divisions are to be set up if needed, and committees are to be formed, composed of representatives of employers and employees. The representatives of the public do not have a place in the trade committees. The formation of a trade division for agriculture and forestry in the central bureau is provided for. The trade committees, in all questions which concern a particular trade, take the place of the administrative committees or of the administrative council, as the case may be.

Where dispute arises, a special judicial procedure comes into operation. For the local labor office, there is

a committee of appeal, in which the chairman of the labor office presides; for the state labor office, a Board of Appeal, with the chairman of the head insurance office as presiding officer. In both, one employer and one employee are additional members. The final authority is a Senate of Appeal in the Federal Insurance Office, which is the court of final resort for the whole social insurance system. The close connection in which the facilities for appeal in the unemployment insurance system stand with those of the rest of the social insurance is in line with the general objective of unifying the various branches of social insurance so far as is compatible with the special circumstances of each.

The practical results of this organization are being awaited with great interest. Great hopes are entertained as regards the power of the executive of the Federal Department to make a new delimitation of districts for the state offices and the local labor offices, and thereby to substitute for the large number of partly inefficient employment bureaus a more limited number of fully efficient ones. The task will surely not be an easy one; for the economic spheres to be consolidated, especially in agricultural sections, are not sharply demarcated from each other. Further, the difficulties in the way of employment service arising from the great distance of the offices from the workers' homes, are not to be underestimated. In circles connected with community and welfare work there is considerable anxiety regarding the separation of the employment bureaus from the close connection in which they have hitherto stood with the welfare organizations of the communities, with the relief of part-time workers, with bureaus for juvenile welfare and with public works for relief of unemployment. There have been doubts also about the strong tendency to centralization, which puts so much

power at the top and limits the independence of the subordinate authorities (for instance, in matters of personnel and finance), as well as about any limitation upon self-government. The success of the system will to a large extent depend on the effective working of self-government. For in case this fails, bureaucracy will rule.

In order to prevent bureaucratization, the officials concerned with employment service, unemployment insurance, and vocational guidance are, in general, appointed subject to recall. Only the president of the Federal Department, the members of the Central Bureau, and the chairmen of the state offices and their representatives have the status of federal civil servants; the chairmen of the local labor offices and their representatives may also attain it. The rest of the personnel of the Federal Department, as was already determined by the Employment Bureau Act of 1922, will be engaged under the ordinary conditions of private contract. It was thought desirable that, in order to retain close coöperation with private industry, employment officers and vocational advisers should not be civil servants. Bureaucracy and officialdom seemed to guarantee neither the necessary adaptability, nor a sufficient knowledge of economic facts, nor a full understanding of the insecurity of the existence of the worker in search of employment.

The fundamental principle of the unemployment insurance is the guarantee of a clearly defined legal claim to a specified support on the basis of a given contributory obligation. The principle of compulsion, which is fundamental to all German social insurance, is sharply applied. There is compulsory insurance only; with optional continuation after the obligation to insure has ended, but no voluntary admission.

In the determination of the group to be insured, all were agreed that only employed persons were to be included, because in their case only can the cases where there was a claim to insurance be accurately determined. Following the precedent of the other branches of social insurance, those persons are included who are subject to sickness insurance or to the insurance for salaried employees and the like (*Angestellte*), and also seamen. Hence the following are included: (1) laborers, apprentices, journeymen, and domestic apprentices (*Hausgehilfen*); (2) shop officials, foremen, and other employees in positions of like grade, for all of whom this must be the principal occupation; (3) workers in mercantile concerns and in drug stores, and office workers; (4) theatrical employees and musicians, regardless of the artistic value of their services; (5) teachers, educators, all employed in connection with education, instruction, welfare work, and the care of the sick, if these are their main occupations and the main source of their incomes; (6) domestic workers whose earnings do not exceed 3600 marks annually; (7) crews of German seagoing ships. A condition for those in classes (2) to (5), and (7), is that their annual income shall not exceed 6000 marks. Employees who, on account of an increase of earnings beyond the limit set for compulsory insurance, fall outside that compulsion, may continue the insurance. The law permits exemption from insurance on petition, or by decree of the Federal Minister of Labor.

Certain groups and sorts of occupation in agriculture and fisheries are included in the circle of insured persons. Against the inclusion of agricultural laborers spoke the same difficult circumstances which have caused the exclusion of this group of persons from insurance in almost all countries: the difficulty of supervision in rural districts, the temptation for employers, at the time of slack

work on the land, to dismiss their laborers while they still remained in their houses and did what work came up to be done. Nevertheless, complete exclusion could not be thought of, because there are unemployed in country districts, and it was feared that in case of neglect there would be an increase in the tendency to depopulation of the land.

The special organization recommended by the Federal Economic Council, which was to be based on the financial interests of the occupational groups concerned, would have made the adjustment which regularly takes place between urban and agricultural labor more difficult. Hence a compromise was adopted whereby three groups of continuous agricultural workers were exempted from the insurance. First, those owners or tenants of arable or wooded property, and their dependents, who in times of peak demand for labor work for hire on neighboring farms, but in general are able to live from the proceeds of their own or their rented holdings. This exception to the general obligation to insure is pretty generally approved. It is justified by the fact that an adequate living is assured from other sources even in case of the loss of outside employment. For similar reasons, and under similar circumstances, certain occupations in inland and coastal fisheries are exempt; in this case the exemption is also extended to employees who have a share in the catch. The second group exempted consists of those agricultural laborers who have made contracts for a year or for an indefinite period with a provision for six months' notice. Six months before the end of their employment they are brought under the law. This provision is in so far just that it prevents dismissal in the slack periods, and still provides for the laborers in case of unemployment. Thirdly, agricultural domestic servants are not

included, on account of the very favorable labor market in their case.

Of the 2,500,000 workers engaged in agriculture about 2,000,000 fall under the exemption provisions, and only 500,000 remain within the insurance act. One must wait and see how the plan works, to know whether the principles of exemption are adequate to the needs of agriculture and to protect the worker. The Reichstag, therefore, in a resolution requested that the government should report within two years at the latest on the results and, in case it should prove necessary, make a proposal for an independent insurance system for agriculture.

Besides the exemptions for agriculture and fisheries, exemption for apprentices in all occupations is provided for, because this group is especially well protected from unemployment, and it was not considered desirable to burden their small earnings with contributions. The condition of exemption is the possession of a written contract of apprenticeship for two years, in agriculture for one. The obligation to insure begins in this case also six months before the termination of the apprenticeship.

Domestic apprentices—lodging with the employer—are included, contrary to the unemployment insurance practice of other countries, and in spite of a favorable situation in the labor market, because, when they lose their employment, it means a loss of living quarters also.

Casual laborers, that is, those working on jobs which last less than a week (for instance, dock laborers), may by petition be exempted if as a rule they work less than 26 weeks in the year. Furthermore, the Federal Minister of Labor may exempt those working in trade across the border and transient foreign agricultural laborers.

The right to unemployment relief exists for all who

are able and willing to work, are involuntarily unemployed, and have acquired eligibility, and whose claim to support has not been exhausted. The concept of ability to work has been defined in the closest connection with that of invalidity for the purposes of the invalidity insurance. Those persons are regarded as able to work who, in an occupation which suits their powers and abilities and which would be suitable for them, adequate consideration being given to their training and former occupation, can earn at least one third of what mentally and physically sound persons of the same trade with similar training are accustomed to earn in the same vicinity. Whether an unemployed worker is to be considered willing to work is judged, as a rule, according to his behavior at the employment bureau, to which he must regularly report. While in general he is obliged to accept any employment, in certain cases he has the right of refusal. The law recognizes as justifiable the refusal of employment: (1) for which the trade-union or locally customary wage is not paid; (2) which could not reasonably be imposed on the unemployed worker, in view of his training or former occupation, or his physical condition, or which would injure his prospects of future advancement; (3) which has become open on account of strikes or lockouts (this right holds only for the duration of the strike or the lockout); (4) where the conditions of the position are physically or morally objectionable; (5) where the support of dependents is not adequately provided for. After a period of nine weeks from the beginning of support, or during a time of occupational unemployment, the unemployed can no longer refuse to accept a position on the ground that it does not suit him because of his preparation or former occupation, unless its performance would result in an important obstacle to future advancement. The administrative

council of the Federal Department is empowered to lengthen the period of grace for particular trades or groups of trades. Whoever without sufficient reason, and after notice of the legal consequences, refuses to accept or begin work in a position, even if it must be performed outside his home town, receives no unemployment relief for a period of four weeks following his refusal. For the same period those persons are excluded who have given up their positions without any serious reason, or have lost it on account of behavior which has justified dismissal without notice. The time may be reduced to two weeks if the circumstances of the case justify a less severe treatment. Anyone who refuses without sufficient reason to submit to a training in a new trade or a continuation of training in the old one, such as would be likely to make future work easier without added cost to himself, does not receive unemployment relief for the period of four weeks following his refusal.

For unemployed under 21 years, for whom the conditions of a new or continued occupational training are not available, and for unemployed who are receiving emergency relief, the support may be made conditional upon the performance of labor. In order to forestall abuse, the kind of labor which may be assigned to an unemployed person has been carefully specified. It must be such as (1) would not otherwise be carried out at all, or at least not at the particular time; (2) is for the common welfare, especially for the benefit of groups of people in need of help and to which they are well adapted by virtue of their age, condition of health, and domestic circumstances; (3) does not delay their prospects for regular work; and (4) involves no unfavorable consequences for later advancement.

Very animated debates took place over the question

whether unemployment caused by industrial conflicts should in every case be considered voluntary and hence not to carry a claim to relief. The bill as proposed answered the question in the affirmative, giving as a reason that in such conflicts the free decision of the individual becomes secondary to that of the group, and that, therefore, the attitude of the individual worker, to the question whether he had wished to lay down his work, could not be considered decisive. It was believed desirable for the sake of neutrality to deny support completely. But in order to avoid unreasonable hardship, it was recommended that there should not be, as was intended in the former unemployment relief plan, a period following the termination of the strike or lock-out within which relief was still to be withheld. From the side of the trade unions it was argued, against the main conclusion, that there are cases in which those not immediately concerned become unemployed entirely against their will; for instance, where an establishment must cease running because there is a strike in the power plant which supplies it with current; or where an automobile factory is idle because the bodies which it needs are not delivered on account of a conflict elsewhere. Nevertheless, it proved impossible to provide that those not immediately involved should have a claim. Had this been allowed, it would have been easy for the leaders of a strike to arrange that only the workers of a single especially important department should actually strike, thus crippling a much larger group. If the unemployed of the other divisions could in such a case receive support, it would make the insurance a one-sided instrument of conflict. Further, the financial consequences, for instance, in case of a strike of workers in transport or communications, which might stop practically all industry, would be of incalculable seriousness.

A formula adequate to the complexity of the problem was not to be found. The compromise finally adopted maintained in principle that during a strike or lockout no relief was to be paid those affected. But where the unemployment is caused indirectly by a strike or lockout, especially when it is not in the plant, trade, or place of employment or residence of the worker, the unemployed are to be supported, if the refusal of support causes an unreasonable hardship. The concept of "unreasonable hardship," known also to some other forms of social legislation, is so ambiguous that the responsible authorities will have an especially difficult task in its application. The administrative council of the Federal Department is to issue instructions as to the cases in which an "unreasonable hardship" is to be admitted. Care must be taken that the unemployment insurance system is not drawn into economic conflicts, and the instructions must be approved by the Federal Minister of Labor. Whether, and from what date, an "unreasonable hardship" arises, is to be decided by the administrative committee of the state labor office.

A further condition for the receipt of support is the attainment of eligibility. He whose claim is to be valid must, in the twelve months which precede the notification of unemployment, have been at least 26 weeks in an occupation with obligation to insure. Eligibility then guarantees a legal claim, which did not exist in the (former) unemployment relief. On the other hand, its acquisition is made more difficult. The previous requirement had been for 13 weeks only of employment—within 12 months—in an occupation subject to sickness insurance. This difference was necessary in order to achieve financial stability for the new system. Further, it served to guarantee that only persons able and willing to work received aid, and fluctuating elements, un-

steady laborers, were eliminated. In order to prevent the loss of eligibility, wholly or in part acquired, certain allowances are made in computing the 26 weeks: for example, as regards work of temporary character, or such as is not within the insurance scheme, continued payment of salaries, care in institutions by order of authorities, sickness, pregnancy or childbirth, and temporary support during unemployment. It is required, however, that in the above cases the unemployed worker shall have been in an occupation subject to insurance at least 26 weeks within the three years preceding the date on which unemployment is notified. A released convict, for instance, who has been in prison for two and a half years has a legal claim to aid, if immediately before his sentence he had been engaged for one half year on work within the scope of the system. For the acquisition of eligibility a period during which insurance is voluntarily continued counts equally with time given where insurance is compulsory. Since casual laborers, in the nature of the case, can become eligible only with difficulty, regulations may be decreed by which membership of a sick fund is to be regarded as equivalent to the claim to support. The regulations may be general, or with respect to particular trades and districts. This allowance could not be made universally, because circumstances are very different for different classes of casual laborers. Dock laborers can count on fairly regular employment; not so the greater number of casual laborers.

The ordinary duration of relief is for not more than 26 weeks. After its expiration it may not be granted again until eligibility has once more been acquired. This time limitation was absolutely necessary for financial reasons. On November 15, 1926, for instance, over 500,000 persons who had been unemployed more than

26 weeks, besides 800,000 temporarily unemployed, were receiving unemployment benefits in Germany. No insurance scheme could bear the cost of such a great number of semi-permanently unemployed. The limitation was meant also to prevent a feeling of being permanently provided for and a consequent unwillingness to work, or to turn to other possible occupations. Following the provisions which had proved their justification in the previous unemployment relief, it is, however, provided that this maximum duration may be extended in cases of an especially unfavorable state of the labor market to 39 weeks, by order of the administrative council, or by the administrative committees of the state labor offices. The order may be limited to particular trades and districts. The administrative council, with the approval of the Federal Minister of Labor, may set a different maximum duration of support for trades or occupations in which regularly recurring unemployment is inseparable from the trade.

The disquieting extent of unemployment in the last few years has, however, shown that even under the much more lenient conditions of eligibility under the former unemployment relief, there might be exclusion of persons both able and willing to work. To prevent severe hardship, and yet not overburden the insurance system financially, it was necessary to supplement the normal insurance with flexible emergency provisions, adapted to conditions of unusual stress. As early as November, 1926, it had proved necessary to introduce emergency relief for those who had not conformed to the period requirements then in force. In the present law, the same sort of provision is extended to those who have not acquired eligibility under its ordinary terms.

In times of prolonged very unfavorable employment conditions, the Federal Minister of Labor, after a hear-

ing before the administrative council, must permit the grant, either generally or with restriction to particular occupations and districts, of aid for unemployed in the form of an emergency benefit. The amount of the aid and the duration of its payment may be limited. Those are to receive emergency relief who are able and willing to work, but are involuntarily unemployed and in need; having (1) either not yet acquired eligibility, but having been for at least 13 weeks out of the preceding 12 months in an occupation subject to insurance, or (2) exhausted their claim to unemployment benefits through expiration of the regular period. Foreigners are to receive emergency relief only in case their own country extends equivalent aid to German unemployed. Whether that is the case is to be decided by the Federal Minister of Labor. He also decides whether and to what extent persons without citizenship in any state are to receive emergency relief. Contrary to the practice of the insurance scheme proper, which guarantees a legal claim to aid on the basis of payment of contributions, a proof of need is required for emergency relief, which is met from public funds. The question who is to be considered necessitous will have to be worked out in executive decisions, which can be based on the experience of the former unemployment relief.

The substantive services of the system are to be classified under the following heads: support of unemployed; sickness benefits; collection of contributions to social insurance; and measures designed for the prevention and elimination of unemployment.

The most difficult problem, besides that of administrative organization, was to settle the amount of support to be given. In order to adapt the insurance to the family obligations of the unemployed worker, the bene-

fits were divided, as in the earlier benefit system, into a main benefit, awarded to the unemployed worker himself, and supplementary benefits for members of the family. The latter are to be paid for dependent children, also for wife or husband, parents, grandparents, step-children, or adopted children, in so far as the unemployed has supported them and they themselves receive no main support from the insurance. There was unanimity as to the necessity of classifying the benefits according to wages; not, however, with regard to the organization of the system and the amount of the payments. Since the financial consequences of an increase in the number of wage classes were difficult to estimate, the government, in July, 1926, carried out an investigation into the results which would come from a system of wage classes. It being made possible by this investigation to estimate with considerable precision the financial effect of any increases, it was possible also to add a few higher wage classes. There are now eleven wage classes, arranged on the basis not of actual earnings but, in order to avoid needlessly complicated calculations, of the average earnings of the previous three months.

In each class a "representative wage" is taken, and on this basis the main benefit is calculated. A family supplement amounting to 5 per cent of the representative wage is then granted for each dependent with a valid claim, up to a given maximum. The amounts may be seen from the table on page 298.

Even against this classification objection was made on the part of the employees. It is said to be unjust, in that it gives unmarried workers of the lowest wage class 75 per cent of the representative wage, whereas those of the highest receive only 35 per cent; and thus the high-paid workers are taxed for the benefit of the low-paid

MAIN BENEFIT

Wage Class	Actual Earnings (weekly)		Representative Wage	Main Benefit (Weekly)	
	Marks		Marks	Percent of Wage	Amount in Marks
I		less than 10	8	75	6.
II	over 10,	less " 14	12	65	7.80
III	" 14,	" " 18	16	55	8.80
IV	" 18,	" " 24	21	47	9.87
V	" 24,	" " 30	27	40	10.80
VI	" 30,	" " 36	33	40	13.20
VII	" 36,	" " 42	39	37.5	14.63
VIII	" 42,	" " 48	45	35	15.75
IX	" 48,	" " 54	51	35	17.85
X	" 54,	" " 60	57	35	19.95
XI		over 60	63	35	22.05

WITH FAMILY SUPPLEMENTS

For 1 additional Person		For 2 additional Persons		For 3 additional Persons		For 4 additional Persons		For 5 additional Persons	
Per- cent of wage	Amount in marks	Per- cent of wage	Amount in marks	Per- cent of wage	Amount in marks	Per- cent of wage	Amount in marks	Per- cent of wage	Amount in marks
80	6.40	80	6.40	80	6.40	80	6.40	80	6.40
70	8.40	75	9.00	80	9.60	80	9.60	80	9.60
60	9.60	65	10.40	70	11.20	75	12.00	75	12.00
52	10.92	57	11.97	62	13.02	67	14.07	72	15.12
45	12.15	50	13.50	55	14.85	60	16.20	65	17.55
45	14.85	50	16.50	55	18.15	60	19.80	65	21.45
42.5	16.58	47.5	18.53	52.5	20.48	57.5	22.43	62.5	24.38
40	18.00	45	20.25	50	22.50	55	24.75	60	27.00
40	20.40	45	22.95	50	25.50	55	28.05	60	30.60
40	22.80	45	25.65	50	28.50	55	31.35	60	34.20
40	25.20	45	28.35	50	31.50	55	34.65	60	37.80

ones. The differences are, however, less crass than they seem at first glance, since class I presumably includes only apprentices, and classes II to IV only a small number of unskilled women and youthful workers. The

bulk of the industrial workers are to be found in classes V to VII. Even tho the present percentages may later be altered, there is agreement that the fundamentals of the system are sound.

In accord with the usual conditions of wage payment, the benefit will be given for the six week-days, starting after a waiting period of seven days. The waiting period is waived if unemployment follows immediately upon employment of less than six weeks, or upon part-time work of at least two weeks' duration in consequence of which earnings have been reduced at least one third, upon inability to work for at least a week, or detention by official order in an institution for the same period. The waiting period may be shortened to three days; and in case of ordinary occupational unemployment it may be lengthened. What the unemployed earns by casual labor is not taken account of for the purposes of unemployment relief, so long as the earnings in a week do not exceed 20 per cent of that amount which he would receive as benefit (including family supplements) in case of full unemployment. Any earnings above 20 per cent are reckoned at half rate. Unemployment benefit may not be granted for those days on which the unemployed neglects to make the prescribed report to the employment bureau. A subsequent explanation of such failure may be accepted.

Workers who are engaged in an occupation subject to insurance, but who in any week, on account of lack of work, do not obtain the number of hours of work usual for their workshop, and on that account suffer a reduction of earnings, may receive benefit for short-time work from the funds of the Federal Department, on the basis of special regulation. The support of part-time workers was not made obligatory, because experience has shown that its advisability depends upon economic

circumstances, and that occasionally a process of house-cleaning can work itself out more thoroly with complete dismissal. Support for part-time work and earnings together may not exceed five sixths of full earnings.

To the functions of the unemployment insurance belongs also care in case of sickness, which had already been provided for in the unemployment relief. The unemployed, while he receives benefit, is insured against sickness, and has thus the same claim on the sickness insurance fund as any actively working insured person. The contributions are met from the funds of the Federal Department. In case of sickness he receives free medical treatment (if necessary, in a hospital), and is supplied with drugs, glasses, bandages, and other minor medical accessories. If he becomes unable to work, after the fourth day the sick benefit of the same amount takes the place of the unemployment benefit. In this case a divergence was made from the provisions of the sick insurance system; the object being that the sick shall have neither disadvantage nor advantage through a difference between unemployment and sickness benefits. Even without this equalization, the amounts would have been approximately the same. To unemployed women, as well as wives, daughters, step-daughters, and adopted daughters of unemployed living in the same household, a benefit is granted in case of childbirth if the unemployed has been insured against sickness at least ten months continuously during the previous two years, of which at least six months must have been within the previous year. The childbirth benefit includes (1) at the time of birth or, in case of complications, in pregnancy, services of a midwife, drugs and minor hygienic necessities, and, in case of need, treatment by a physician; (2) a single payment of 10 marks toward other costs of childbirth and, in case of compli-

cations in pregnancy, 25 marks (in case no birth takes place, 6 marks); (3) support for a rest period, to the amount of the sickness benefit in case the mother is herself insured, otherwise a minimum of 50 pfennigs daily for four continuous weeks before and six weeks immediately after childbirth. The benefit for the first four weeks is to be paid, at the latest, on the day of childbirth. The duration of payment of the benefit for one who herself carried insurance before childbirth is extended to two more weeks if in this period she is engaged in no occupation for pay, and if a physician states that birth will take place within six weeks. If the physician makes a mistake in estimating the time of birth, the prospective mother has the same claim to benefit, from the time set by the physician's certificate until actual childbirth. Finally, there is a fourth provision, for a nursing benefit, of half the sick benefit, or a minimum of 25 pfennigs daily, until the end of the twelfth week after childbirth.

If an insured person dies, his family receives a sum amounting to twenty times the daily representative wage. If the (sickness) fund provides for a higher payment, this will be granted. Over and above sick benefits or rest-period benefit nothing will be paid.

Very essential also is the provision that contributions toward pensions under the federal laws (*Rentenversicherungen*) will be paid, in amount sufficient not to let the unemployed worker's claim lapse.

Certain welfare measures are authorized, for the prevention of unemployment and for finding occupations for recipients of insurance benefits; with the approval of the Federal Minister of Labor they may be extended to recipients of emergency relief. Among them are the payment of travelling expenses (which may also be to neighboring countries, provided emigration does not take place) for the unemployed himself as well as for his

family; further, the support of the family until they move to the husband's place of labor, and provision of equipment for work. Recipients of benefits who have accepted a position in which they can attain full earnings only after having acquired the necessary skill, may be given an addition to their wages from the funds of the Federal Department up to a period of eight weeks. If a group of unemployed are sent to another locality to work, a leader may be appointed for them who conducts them or aids in overcoming the difficulties of adaptation.

The chairman of the labor office may establish or subsidize measures for occupational training from the funds of the Federal Department, or pay the customary tuition fees for such training, so long as these measures are adapted to remove persons from the lists of unemployed. Arrangements of this sort have proved successful in Germany, especially for young persons. They should be continued just as the other forms of productive unemployment relief, now known as "value-producing unemployment relief." It includes the emergency public works, for which there have been since 1918 a series of varying regulations. The principles at present in force are adopted, while the execution in detail is left for later rulings. On these principles loans or contributions from the funds of the Federal Department, to the amount of the benefits saved, may be granted in the future for measures which are suited to decrease unemployment, especially the initiation of such works as would not otherwise have been undertaken. The funds may be put at the disposal of public enterprises only, or at least of those for the general good, that is, not undertaken for profit; and for such measures only as are of productive value for the national economy, especially those adapted to increase the amounts of domestic foodstuffs, raw materials, or industrial equipment.

An essential improvement follows as regard the legal status of the emergency workers. Hitherto emergency public works counted as a form of unemployment relief and the provisions of labor law (for instance, the law relating to shop councils) thus did not apply to emergency works; in future such occupation is to be carried out under the conditions of a free labor contract. To be sure, the possibility of a reduction of wages remains. Tho the wage rate in general is to be the standard union rate (*tariflich*), the administrative committee may set a maximum limit; for instance, if there is danger that the worker will in emergency works receive more income than in his own trade.

Besides the arrangement and amount of the benefits, the closely connected question of the raising of funds has received much attention. Controversial points were: public participation in the provision of funds, the amount of the contributions, the constitution of the risk-bearing group with respect to time, place, and occupation, and the procedure in the collection of contributions. The attitude of the various groups as to division of the burden went side by side with the attitude toward administration. The towns, in spite of heavy financial burdens, wished to participate in the raising of funds, in order to be able to take part also in administration. This being rejected, and the principle of self-government finally decided upon, there resulted full financial responsibility for the participants. The funds which the Federal Department needs for carrying out its functions are hence raised by contributions in equal amounts from employers and employees. Since at times unemployment may become so great that expenditures cannot be covered from the contributions of the participants, the act provides that the government shall give loans when the contributions do not suffice. Further,

insurance risk is separated from emergency relief; the latter is met entirely from public funds ($\frac{4}{5}$ federal government, $\frac{1}{5}$ local).

The distribution of risk over time is effected in a twofold manner. First, in order to prevent an undue increase of contributions in times of depression, a maximum limit of contributions is set (3 per cent of the representative wage used for calculating benefits). Second, a sinking fund, or emergency fund, is provided, which shall be kept large enough to support 600,000 unemployed for at least three months (approximately 130,000,000 to 140,000,000 marks). In the geographical determination of the risk-bearing group, it would have been logical, from the standpoint of equal burden for all groups as well as of simple and easily supervised administration, to form a unified national risk-bearing group. That plan was abandoned in order to keep alive the interest of the district bodies in an economical use of the funds. A compromise was reached, which does not satisfy any of the groups completely. The contribution (which is collected as a unit) consists of one portion set for the whole nation by the administrative council of the Federal Department, and another by the administrative committee of the state labor office for each district, according to its special needs. The sum of the two is limited by a national maximum, which the administrative council determines according to the state of the labor market.

It remains to be seen how this compromise will work in practice. In spite of all precautions the arrangement has the disadvantage that it distributes the burden of insurance unequally over the country. The share of the states, which in principle is supposed to cover the needs of the state labor offices, will vary in the different parts of the country, and thus influence unequally conditions of competition in industry and the living condi-

tions of the working class. Whether these disadvantages will prove to be outweighed by the greater economy of the lower bodies is in the nature of the case doubtful, since economy in employment bureaus may not necessarily always be a blessing for industry.

The collection of the contribution (which is calculated in fractions of the basic wage) is effected by utilizing the existing machinery, which has proved inexpensive and convenient; that is, in general, through the sickness insurance agencies, which pay over the sums to the state offices. With the maximum levy of 3 per cent, the income for the 16,400,000 persons subject to insurance under present wage conditions would be about 52,500,000 marks, which, to be sure, may be lessened by more or less considerable defaults. The average expense of unemployment relief alone for each unemployed worker would amount, according to the estimates of July 2, 1926, to 58.16 marks; including additional expenditures for sickness insurance, employment bureaus, and the like, the sum was 70.76 marks. On the basis of these figures, the number of unemployed which the new insurance system could carry with the maximum contributions may be estimated at 700,000.

With the establishment of systematic unemployment insurance the cap has been added to the great structure of German social insurance, which attempts to shield the workman from all the insecurities of his life in industry. Altho the new legislation has still to give proof of its practicability, and tho at many points addition and alteration will later prove necessary, all must recognize the monumental character of the system. Its working will contribute greatly to clear up the question how far social policy can be based on self government by the participants.

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THE FORTY-FOUR HOURS CASE IN AUSTRALIA, 1926-1927

SUMMARY

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I

It would be an exaggeration to say that the Australian economist looked forward to the publication of the judgment in what has come to be known as the Forty-four Hours Case with the same eagerness as the industrialist. That is not to say, however, that the proceedings in this "test" case (to name it by its full title: "In the matter of The Amalgamated Engineering Union Claimant, and J. Alderdice & Company Pty. Ltd. and Others, Respondents," No. 61 of 1926), were not followed and the findings of the court anticipated, with very keen interest by the economist. For the problem whether a general curtailment of the working week from 48 hours, can be effected without serious loss and disadvantage to industry and the community generally, is one that lies well within the province of economic study.

The matter reached the Commonwealth Court of Conciliation and Arbitration (in its full jurisdiction) from a reference to it by the sitting judge, who under Section 18a of the Commonwealth Conciliation and Arbitration Act remitted an application by the Amalga-

mated Engineering Union for the variation of an award that would provide for a forty-four hour week in place of the forty-eight hour week then operating. This by no means was the first occasion on which the Court had addressed itself to the consideration of the feasibility of a forty-four hours week. An application with this objective was successful when made by the Australian Timber Workers to His Honour Mr. Justice Higgins in the year 1920 (the case is reported in 14 C. A. R.) and, following this, the Amalgamated Society of Engineers received similar treatment (vide 15 C. A. R.). In the year 1922, however, the Court ordered a reversion to the forty-eight hour régime in both these industries, because it was obvious to them that prices, wages and business generally had receded from the peak conditions that prevailed when Mr. Justice Higgins made his awards in 1920. In other words, the expectations entertained in the year 1920 were not being realized, and by the year 1922 the timber and engineering industries could, in the court's view, no longer support a forty-four hour week. This view, however, was not shared by the unions, and Mr. Mundy (Amalgamated Engineering Union) pressed in argument in the Forty-Four Hours Case that the experiment had not been given a fair trial.

II

It was realised from the outset that the renewed application of the Amalgamated Engineering Union for a variation of its award involved in its train something far more than the hours to be worked by employees in the engineering trades. Employers and employees alike in the whole community recognized that the issue was, in fact, whether a forty-four hours week was to govern normal Australian industries. Judge Lukin, in his judgment, put it this way, "Whether the normal standard

of forty-eight (48) hours per week now obtaining in normal industries in Australia whose industrial disputes are within the jurisdiction of this Court, should be reduced to forty-four (44) hours per week, is the indirect and substantial question that is involved. Our decision in form will directly determine whether the hours in this industry are to be reduced to forty-four (44) as claimed, but that decision will operate as a strong influencing factor in determining a claim for a similar reduction in the many other industries coming within our jurisdiction." As was to be expected, the case in all its surroundings assumed something like the proportions that befitted the occasion. The number of advocates (whether barristers, solicitors or laymen) who sought the Court's leave to appear or intervene on behalf of the various interests and organisations concerned, directly or indirectly, exceeded twenty-five. In all, one hundred and forty-five persons gave evidence, either as interested or as independent witnesses and whether expert or otherwise. Approximately two thirds of the witnesses were "industrialist," that is, called by the applicant or respondents in general support of a contention. They were from various trades, such as blacksmiths, metal moulders, boilermakers, agricultural implement makers, tobacco workers, coachbuilders, matchmakers, painters, glass workers, leather workers, cement workers, bacon workers. The witnesses not referred to as "industrialist" may be described, in contradistinction, as professional and official, and included physicians, engineers, accountants, statisticians and a University lecturer in economics. The exhibits in the case reached the amazing figure of 543. The latter are, as one would expect in the circumstances and from their great number, of an extremely interesting and varied nature. They comprise, *inter alia*, reports of various commissions (e. g.

Sankey and Samuels Coal Industry Commissions), regular official reports (e. g. Tariff Commission), and Year Books of various countries; reviews, periodicals, journals, letters and handbooks; a multiplicity of graphs, charts, returns, index figure tabulations and statistical tables to illustrate output and productivity, wages and prices, etc.; balance sheets, and text books in economics. Economics textbooks, more or less familiar to the student and general reader, were cited from time to time. Gide (*Principles of Political Economy*), Marshall (*Economics of Industry*), and Gibbons (*Industrial History of England*) were among those "put in" (as the legal phrase goes), as well as Henry Ford (*The Great Today, The Greater Future, My Life and Work*) and Philip Snowden (*Labor and the New World*); while in the judgments one finds quoted Pigou, Edie, Seeböhm, Rowntree as well as others. Among the exhibits "put in" as evidence by Mr. Mundy was an article by Mr. Arthur Kitson in *The Nineteenth Century and After* (March, 1924) headed "Our Benighted Economists!" The case was lengthy in point of time also, opening on August 24th and terminating so far as the taking of evidence was concerned on December 17th. The sittings of the Court were held at two centers — Melbourne and Sydney.

It will be admitted that the Court was faced with a momentous social and industrial problem, for, to quote Mr. Justice Higgins (*Amalgamated Society of Engineers Case*, 14 C. A. R.), "a change in the standard of hours is, of itself, a tremendous social change, of far reaching consequence." Their Honors, for the better part of three months, were being slowly submerged by masses of conflicting information, digested or otherwise, and figures, relevant or otherwise. The evidence, in point of volume, is almost terrifying in its magnitude, the tran-

script of it covering 5734 typed pages of foolscap paper.

The case was argued on both sides with a force and earnestness that at times got the better of the exponents. Judge Beeby was alluding to this partly, when, in his judgment, he says — "Counsel for associated employers repeated the dismal forebodings which have always preceded economic change. They alleged that further extension of the 44 hour week in Australia would imperil many industries and lead to disastrous financial result. They asked the Court to be guided more by possibilities of the future than by experiences of the past. Representatives of the Trade Unions, on the other hand, under-estimated the probable results, and did not seem to realise that under the present system of competitive economic organisation, shortening of hours of employment must be accompanied by greater individual effort to keep up production." In much the same vein, Chief Judge Dethridge speaks of the "general prognostications of disaster on the one hand or of uninjured prosperity on the other" that were said to follow inevitably from the establishment of a forty-four hour week.

III

On February 24, 1927, the Court delivered judgment, and, in the process, occupied the greater part of one of its own working days. Their Honors had thus had somewhat over two months (the greater part of which coincided with the legal vacation) to review and consider the evidence and come to a decision. Three judgments were read (one of them was a dissenting one), and all three reached considerable length, for they attempted to deal with many aspects of this question. These judgments, when printed, fill a fair size handbook publication. By a majority (Judge Lukin dissenting), the Court approved of "the reduction of the standard hours

of work in the engineering industry to 44 per week as from the coming into operation of the award to be made herein."

It would amount almost to impertinence to remark that their Honors fulfilled their tasks conscientiously and well. The evidence was most carefully canvassed and weighed, and for the student of higher economics, the case will constitute a veritable storehouse and fund of information. If at times one feels that the *rationes decidendi* become rather labored and unattractive in their setting, one must confess that on the whole this tripartite judgment is a piece of close and cogent reasoning, amply illustrated and supported, and couched in a clear and lucid language. So that, besides being a judicial (or to be more correct, a quasi-judicial) pronouncement of the highest importance to Australia, the judgments will stand as a distinct contribution to Australian economic literature, and in addition will serve to launch under more favorable conditions a very important industrial experiment.

It will be convenient to distinguish the conclusions reached in the three judgments. Judge Beeby "thinks that the judgment of the Court should favour the awarding of the 44-hour week to industries generally, with the following exceptions:

(a) The present hours worked in direct primary production to continue. On ascertainment of the actual direct labor cost of primary production, standard hours to be reconsidered.

(b) The Court may exempt any industry (as distinguished from an individual employer) able to prove that further reduction of working hours will seriously imperil its continuance.

(c) The traffic section of railways and tramways (excepting steam locomotive drivers and their assistants)

without prejudice to the right of those engaged in the occupations to apply again after the lapse of twelve months.

(d) Occupations which call for no serious physical or mental effort such as caretakers, watchmen, gatekeepers, etc."

He thus favors a general application of the forty-four hours principle to industry, with certain very definite and specific exceptions. Judge Lukin is as decisive on the negative side. He deems that a forty-four hour week will have "serious attendant consequences," and that "It spells retrogression or at the best stagnation and not progression. Altho it may not mean 'industrial paralysis,' or 'economic disaster' as is suggested by the Tariff Board, as a consequence of further increases in the cost of production, it certainly does mean in my opinion very serious injury to the community of Australia generally and to this industry in particular. It means an undoubted decrease in output when a substantial increase is so absolutely necessary to this young country, a seriously increased cost directly or indirectly of such reduced output, the accumulative effect of which it is very difficult to estimate or to foresee; the weakening of our power to develop our own resources and consequent delay in doing so; the weakening of our power to resist foreign competition and its inroads and the consequent weakening of our financial stability; the weakening of our power to recapture the balance of trade by making our exports exceed our imports and provide us with the wherewithal to meet our heavy overseas debts; the discouragement of our manufacturers to continue in some cases a hopeless struggle or to invest further capital; the discouragement of prospective manufacturers to invest and commence business in Australia under such adverse conditions when better conditions,

more conducive to business success, prevail in other parts of the world; the delay in commencing and in carrying into effect further public utilities so necessary to our advancement, the still further weakening of our primary industries, which have already been overstrained by existing conditions and which are competing and must continue to compete on prices determined by competition in world markets; the creation of further dissatisfaction in the rural worker whose hours and conditions of labor appear to be out of fair proportion with that of the city worker and whose drift, already very serious, to the city, its attractions and its better living and wage conditions will be accentuated. And all for what purpose? Admittedly not for what is necessary to secure to the worker a limitation of hours necessary to prevent sweating or over fatigue or ill health but to secure to him extra leisure, reasonable I recognise, if it were not for the too serious attendant consequences which it must occasion the community as a whole and this industry in particular."

From a consideration of two such diverse judgments, one turns to the reasoning of Chief Judge Dethridge with added interest. The Chief Judge holds the balance between his brother judges, finally throwing in his weight, obviously with a considerable degree of doubt and great heart-searching, towards Judge Beeby. But he does not accept the principle of a forty-four hour week for industry generally, as does Judge Beeby, observing that his judgment is "less far reaching than that of my brother Beeby." He apparently believed, as a sociologist, that a forty-four hours week was desirable in the general interest, and he feels himself justified in casting on the respondents the onus of showing that a reduction of hours would not be for the general good. He had established in his mind a certain presumption

which he charged the respondents to rebut. He comes to the conclusion that the opponents of a forty-four hour policy have failed to substantiate a case in rebuttal, and he is therefore at liberty to grant the application. On the other hand, it would appear that Judge Lukin is throwing the burden of proof on the applicant party, his decision resting largely on the fact that conditions have not materially changed since the previous two Full Court cases.

Adverting again to the Chief Judge's judgment, one may perhaps, in an attempt to interpret His Honor's mind, lay down the following propositions as forming the chief links in the chain of His Honor's reasoning.

1. The employee is in need of a greater leisure in order to keep abreast of world developments and enter into a fuller life. "Education," says His Honor, "has spread among manual workers, their desires are more extensive and more varied, their interests and tastes have developed, they are largely organised, their political power has enormously increased and they are able to get a hearing for their aspirations." Furthermore His Honor is mindful of the dangers resulting from industrial fatigue, strain and overwork. It is certainly reassuring to read His Honor's comment: "It was not suggested, however, that industrial fatigue prevails now to any material extent in normal Australian industries working the 48 hours and little evidence relevant to this aspect was tendered."

2. There is no reason to believe that such increased leisure will be misspent, resulting in discontent, insubordination, inefficiency, and a corresponding impairing of the worker's moral fibre. On the contrary, His Honor believes that his efficiency will be enhanced. This proposition is, of course, most questionable in this instance, and is one that evokes the liveliest controversy. Obvi-

ously it contains the key to the situation; for if his Honor's forecast proves to be correct in substance, a reduction in hours will have been in every sense justified. His Honor admits that "Clearly the country cannot afford a substantial decrease of its production. Clearly, too, the manual workers will suffer by such a decrease." But he is confident that output will be maintained. His Honor's remark upon the evidence in this particular is worthy of attention. "The evidence," he says, "presented in support of the contention that the reduction of hours would not be followed by a serious loss of production consisted, to a large extent, of published accounts of investigations and experiments made in Great Britain, Europe, America, and, to some extent, in Australia."

3. The employees should participate in full measure in the utilities created by man's genius or ingenuity or due to the bounties of nature. This proposition will be conceded as a matter of social justice to the wage-earning section of the community. If the entrepreneur fails to devise the requisite concentration of the factors, if he fails to apply apposite scientific methods to the elimination of waste, or if he omits to scrap aught that retards efficiency or rapidity of production, then he is deficient *qua* entrepreneur. Because of such shortcomings, the employee should not be penalised by being required to work long hours to compensate for his employer's incompetence. But is it proven that the Australian employer is lacking in this respect? Is Mr. Crofts correct when, in argument on behalf of the applicant, he urges that the responsibility for a deficiency of production rests entirely on the employer? For if the Australian employer appears to lag, in a comparison say with the American captain of industry, is that fact due solely, or to a substantial extent, to his incapacity or inertia?

Have sparseness of population and paucity of capital, the organisation of labor, the insufficiency in experience and technical education of the worker, the country's fiscal and industrial policy, the public debt and natural conditions, no bearing on the matter? Admitting that the institution of a forty-four hour week in Australia was largely a matter of time, had that time arrived? Or was the Court premature in its finding? It is significant that Henry Ford, in the vanguard with a five-day week in his industries, believes strongly that an earlier introduction of an eight-hour day in America would have made for poverty rather than wealth.

An additional fact commends itself to the Chief Judge in this connection. He says: "The necessity of adopting labor-saving methods and plant is stimulated afresh with every increase in labor cost . . . past experience shows that employers can, and do, respond to the need caused by the decrease of manual labour, and find means of largely overcoming loss of output and delay in completion."

4. If, by reason of $8\frac{1}{2}$ per cent reduction in the length of the working week, the output be diminished, the community (the greater part of whom are employees) will have to suffer and not the employing class in that capacity. Any loss to the employer will be immediately passed on. "The claim for a shortened working week is frequently treated as a claim against employers, but it is really a claim against the community. Whether the reduction of working hours be just or unjust, the cost, if any, must substantially be paid by the public at large"; this is how His Honour words the matter. The burden of the judgment (if any) is not to fall on one section of the people only; it is to be no "class judgment."

5. The concession of a forty-four hour week will make for peace and harmony in industry. His Honour

says: "The conclusion cannot be evaded that the continuance of the 48-hour week is likely to be accompanied by an increased slackening and reduction of output among these classes of workers, which will largely offset the output derived from the extra four hours' work per week. Strikes which may occur on questions of hours may reduce production, but their effect would be transient and innoxious compared with that of an increased continual slackening of effort. Intensity of will to work, according to all experts, is a most important economic factor, and it is not to be overlooked by this Court." Later (on March 16th), Judge Beeby, reading from a written statement in the Arbitration Court said "The Court is impressed with the grave necessity of creating a more harmonious relationship between employers and employees." On the other hand, it is objected that the decision in the forty-four hours case may, in its ramifications, lead to greater unrest, insecurity and instability. Mr. Foster, on behalf of the Unions, made it clear that the worker would not cease to strive for less than forty-four hours. The Chief Judge too emphasised the fact that already a considerable number of employers work on a reduced week. He says: "It may be stated, broadly, that throughout Australia — Clerical workers work 44 hours or less. Building trades, boot trades, waterside workers, flour-millers, and shearers work 44 hours. Some classes of storemen and packers work 44 hours. Shop-assistants — 47 hours or less. Rubber workers — Male, 46; female, 44. Clothing trades, mostly females — 44. Printing — largely 44." Will these trades or callings be inclined to agitate for a week of fewer hours in order to retain the favored place which they enjoyed in industry prior to the forty-four hours judgment? Will the rural workers be spurred to demand a 48-hour week so that they may share in the general advance of the in-

dustrial commonalty? It is, of course, one thing to decree a reduction in hours to secondary industries when you count on their protection against the intrusion of the products of foreign cheap labour by means of a higher tariff. But the tariff is no panacea, even for secondary industries, as Judge Beeby confessed when in his judgment he wrote:—"The strongest case against the application of the shorter working week was made by those concerned in manufacturing industries which, notwithstanding tariff protection, are affected by foreign competition." Later (on March 16th) in the written statement above referred to read in the Arbitration Court, he said: "Since the judgment of the Full Court much has been published by employers regarding the need of increasing and cheapening production, particularly in the section of their operations affected by overseas competition. During the 44-hour proceedings the Court was deeply impressed with this aspect of the case." A tariff would not avail the Australian primary producer even to the limited extent that it does the manufacturer for his prices are fixed in a world market. Thus serious consequences may easily overtake our wool, wheat, butter, and meat industries should there be a falling-off in production springing from the discontent that demands a shorter working week.

IV

On the question whether the needs of the country can be satisfied without calling on the worker for more than forty-four hours per week, very instructive statistical tabulations were submitted to the Court by Mr. J. T. Sutcliffe (of the Commonwealth Bureau of Census and Statistics) and Mr. F. C. Benham (lecturer in Economics in the University of Sydney), and from those figures an interesting argument developed upon the question

whether Australia had regained its pre-war productive capacity. According to a recently published monograph by Mr. Sutcliffe (*The National Dividend*) the average productivity per breadwinner per annum increased from an index figure 952 in the period 1910-11 to 1912-13 to 1,033 in the period 1922-23 to 1924-25. Mr. Benham, in evidence, contended that, altho in the year 1926 Australia recovered its pre-war productivity per head of population, yet for the quinquennial period 1920-24, the average production per head of population was lower than that for the period 1909-14. He comes to the conclusion that "Australia is not at present, nor has it been over the last four or five years, in as good a position as that in which it was for the four years before the war. Owing to the fact that interest on our external debt has been increasing at a great rate above our national income, our position now is worse than it was in the pre-war years." Mr. Benham's view finds support in the evidence of Mr. B. Latham (President of the Australian Institute of Actuaries, and Actuary to the Commonwealth Bank). Mr. Latham said: "We are heavily in debt, and our indebtedness is increasing rapidly, while our production per head is not increasing. Our position is not as sound as it was before the war. It is not as sound and as healthy as we would like it to be." The fact that clearly divergent conclusions were arrived at as to the condition of our post-war productivity is attributed, in the main, to the different index numbers chosen in each case, to adjust prices. Obviously no index number can be said to offer satisfaction in full. It is then no matter for surprise — at least to the lawyer — that Judge Beeby speaks of the evidence available to the court on this phase of the case as "not conclusive." He holds that "the accuracy of index numbers is not sufficiently established to justify definite conclusions or

comparisons with years prior to the first use of the index number." Elsewhere in his judgment this opinion is amplified thus: "Comparisons of quantitative production were arrived at by the use of index numbers fixed on nebulous data. After the date of the first use of index numbers, provided reliable data are collected, the index numbers facilitate reliable future comparisons of quantitative production, but they are not reliable in taking the comparisons back to years before the fixing of the index numbers on data not collected for purposes of comparison." Judge Beeby, therefore, does not accept Mr. Benham's conclusion, because to him the matter is not proven, and he therefore fails "to agree with Mr. Benham's forebodings." But on the same reasoning, he does not reject or dispute Mr. Benham's results. The Chief Judge, however, while confessing that "no index number is completely satisfactory," adds: "Probably one would be safe in assuming that we have now regained in the average year the same production per head as in the five years immediately preceding the war, and a considerably greater production per head of population than the average during the first decade of the century."

V

The judgment of the Court in the Forty-four Hours Case should have an important bearing on the fiscal and commercial policy of Australia. Protection may indeed be regarded as the accepted policy for the Commonwealth; but there is a strong body of opinion that is resolutely opposed to a further increase in the tariff level unless just cause be shown. Should, however, production costs be enhanced as the result of a shortened week, a demand — hard for the moderate protectionist to resist — would in every probability be made for a re-

vision of the tariff rates in an upward direction. But once the tariff mercury begins to rise, stability and equilibrium are not easily restored. Organised labor may plead that it is not getting its full share (reflected in wages) in the new "prosperity" resulting from a higher tariff, and the Court may, on that ground, admit the claim. The manufacturers may make a further application for aid to the Tariff Board, to cover the cost of the increased wage, and this may be granted. As so the process; where will it end? The Tariff Board has already complained of this "passing back and forth between the Federal Arbitration Court and the Tariff Board for increases in wages and duties which can only result in an ever-increasing wage rate and an ever-increasing tariff." (The quotation is from the Tariff Board's annual report, dated June 30, 1926, where it takes the Court to task, alleging that the Court takes no cognisance of the capacity of industry to pay the prescribed wage.)

VI

The Chief Judge deemed it advisable to indicate generally how he will view future applications for variations of awards to obtain a curtailment of the working week. He says "in industries which are similar in their conditions as to leisure, or want of leisure, to the engineering industry the Court will probably apply a similar reduction as in the case of the engineering industries, but not in other industries, or not to the extent that my brother Beeby has indicated." His intimation, too, of what is involved in the forty-four hour week is of interest. The Court does not enforce a five-day week of forty-four hours. It is by no means convinced, as is H. G. Wells (*The World of William Clissold*), that a longer spell at the week-end is in the general welfare. Judge Dethridge writes: "Whether the 44-hour week, involving a whole

holiday on Saturday, is desirable is more disputable. In some cases economic conditions may make it preferable: but it would involve more than eight hours' work per day and would retain some of what are alleged to be objectionable features of the 48-hour system. It is not at all clear that the full holiday on Saturday would be for the welfare of the worker."

The judgment of the Court was received in industrial circles with mixed feelings. The unions welcomed it as the beginning of the "final concession of the clear 8-hour day to all engaged in normal industries in Australia." It may have been to stifle the counsels of alarm and gloom that pervaded other quarters that the Chief Judge, when hearing a plaint of the Australian Glass Workers' Union on February 25th, took the opportunity to remark that "the only hope that the workers have of preserving the 44 hours which in the march of time they have managed to secure to a limited extent — only a limited extent — is by pulling their full weight." He says: "The 44-hour week is possible only if the workers in every way work up to their limit — keep up to the collar all the time. No Court, no Parliament, no power on earth can get a 44-hour week for the workers if they do not work their best. They must work their best. It means that payment by results will have to be recognised as a legitimate thing. It does not matter about union rules. Payment by results must come. If it does not come, the 44 hours will have to go."

This pronouncement by the Chief Judge, forecasting the attitude of the Full Bench on the vexed question of piece-work, reassured many who believed that nothing but calamity could result from the Forty-four Hours Judgment. A few days later an official statement was issued by the Secretary of the Trades Hall Council, restating the dangers that Unionism sees in piecework: "Unionism is not opposed to any system which will in-

crease production, so long as unemployment coming from overproduction can be avoided, and as long as workmen are protected from over-competition among themselves or from the unfair cutting of piecework rates. We admit that production can be increased, but not by employers dictating the piecework rates of pay workmen shall receive."

On February 28th, His Honour Chief Judge Dethridge while hearing a claim for a fresh award made by the Federated Storemen and Packers' Union described more particularly what is to be understood by a "normal" industry. He said that "if the men were not working in an occupation that involved unusual strain or fatigue, or more than the usual dirt and grime, it was *prima facie* that the industry was not one for 44 hours, but was a 48 hours' industry." In answer to a question put by the Federal secretary of the union, His Honour agreed that the onus of showing that it was a forty-four hour industry rested on the advocates for such applicant union, and that the case would have to be proved "up to the hilt."

Granted that the Court's finding is a sound one and in strict conformity with economic theory, the economist still has his quarrel with a system which permits of a tribunal — legal in its general standing, outlook and procedure — to deal with matters where economic and social and not legal principles are supreme. Generally speaking, in other parts of the world, inquiries into problems such as faced the Court on this occasion, have been conducted by economists or by commissions on which economists have been adequately represented. But in the Forty-four Hours Case, the economist does not figure largely, and it may well be contended that Parliament should delegate such inquiries to trained economists rather than to a quasi-judicial body. In Australia, however, the law, in her mission of estab-

lishing and maintaining order and stability, has boldly entered the field of industry and there she seems firmly seated.

VII

The further course of adjudication during 1927 may now be noted.

In the Forty-Four Hours Case, the Chief Judge announced that the Court would probably grant a reduction of hours in industries which were "similar in their conditions as to leisure or want of leisure to the engineering industry." In order to establish such a similarity and obtain a lower standard working week, several applications have been made during the present year. On this ground the Court approved of a reduction (with certain exceptions) in the case of blacksmiths, boiler-makers, moulders and iron workers assistants. The exceptions are those industries as carried on by railway authorities in Australia, the agricultural implement making industry, the motor body and coach making industry and the motor chassis assembling industry. The Chief Judge again took the opportunity of adding that "the shortening of the working week to 44 hours can only be maintained if there is no substantial reduction in production."

In June, applications were made by the Commissioners of Railways of the Commonwealth and of the States of Victoria, South Australia and Tasmania, that the railway departments which they control should be exempted from the reduction of hours to 44 per week in respect of metal trades and engineering undertakings conducted by them. The applicants stressed the present serious financial condition of the railways, relying on this as the chief ground for the applications. The Court, however, did not deem it sound to distinguish between the railway industry as a state instrumentality and out-

side industries, and so the applications were refused. But the Court warned the workers that "it is urgently necessary for the employees to coöperate with Railway Commissioners in securing a daily increase of output to counterbalance the loss of working hours."

In October the Court applied the principle of the main Forty-four Hours Case to employees in the gas-making industry, specifically excepting such classes as lamp-lighters, lamp-control men, lamp-maintenance men and watchmen, whose work was not so arduous or uncomfortable as that of the generality of workers in this industry.

In November a similar claim was brought by the Federated Agricultural Implement Machinery and Iron Workers' Association of Australia. The members of this organisation are engaged in three distinct industries: the manufacture of agricultural implements, the manufacture of bedsteads and fenders, and the manufacture of ovens, stoves and ranges. Counsel for the respondents admitted that there was no essential difference between the nature of the work done by members of the claimant association and that of engineers in respect of a claim for increased leisure, and the Court's judgment was based on this admission. In the Forty-four Hours Case the Chief Judge has said that "Industries may be so assailed by overseas competition or may be in such financial stress that the shorter week instead of being a boon would be a bane to both employees and employers. It is better for a man to work 48 hours at his trade than not to work at all." Respondents contended that the industries now before the Court were subject to very keen competition from the United States and Canada, and that they should be regarded as falling within such an exception as was indicated by the Chief Judge in the passage just quoted. It was argued that these overseas industries had been established for a con-

siderable period of time and had an elaborate selling organisation; that they were backed by enormous financial resources and were carried on under the most modern and efficient systems of production; that these manufacturers were obtaining raw materials at a very much lower price than the Australian manufacturer has to pay; that they had less taxation to meet than is the case in Australia, and that in America the operatives worked, on an average, about 49 hours per week. The Court confessed that the real issue before it was whether it should, with due regard to the interests of these industries and the country, reduce the standard working week. It decided that it would not do so, being, in the language of the Chief Judge, "studiously regardful of the consequences." The Court spoke of the "foreign industrial enemy" as not only "within the gates," but "strongly entrenched there" and it must not, therefore, "sap the local industry's powers of resistance." By any interference in these hardpressed industries, it recognised that it might harm both employers and employees (especially the latter). It was mindful, too, that it might, by an alteration of working hours, deprive these industries of any hopes of successfully establishing an export business. The Court, in brief, viewed these industries as being subject to "special circumstances" that do not warrant the extension in this instance of the principles of the Forty-four Hours Judgment.

Applications for a reduction of the standard working week have also been made on behalf of employees in the printing industry, glassworkers, locomotive engine drivers and miners. In all these matters evidence has been taken; but, to date, the Court has not delivered judgment in any of them.

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